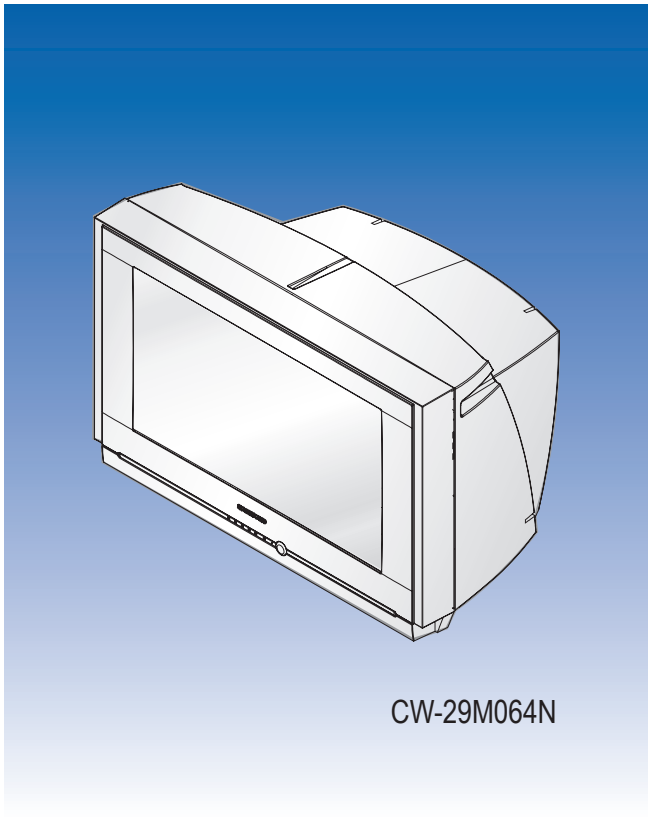
SAMSUNG

COLOR TELEVISION RECEIVER

Chassis : S16A(P)_GREEN-2

SERVICE Manual

COLOR TELEVISION RECEIVER



CW-29M064N

FEATURES

- Green CRT
- Multi Wide System
- LNA Plus(Low Noise Amplifier)
- Turbo Plus
- DNIe jr.
- Low Stand-By Power Wattage
- SOUND Equalizer

ELECTRONICS

This Service Manual is a property of Samsung Electronics Co.,Ltd.
Any unauthorized use of Manual can be punished under applicable
International and/or domestic law.

© Samsung Electronics Co., Ltd. **Aug. 2005**
Printed in Korea
AA82-02809A

Table of Contents

Chapter 1 Precaution

- 1-1 Safety Precautions 1-1
- 1-2 Servicing Precautions 1-3
- 1-3 Static Electricity Precautions 1-4
- 1-4 Installation Precautions 1-5

Chapter 2 Product Specification

- 2-1 Product Features 2-1
- 2-2 Key Features 2-2
- 2-3 Specifications Analysis 2-3
- 2-4 Accessories 2-4

Chapter 3 Alignment & Adjustment

- 3-1 Service Instruction 3-1
- 3-2 How to Access Service Mode 3-2
- 3-3 Factory Data 3-3
- 3-4 Service Adjustment 3-9
- 3-5 Software Upgrade 3-11
- 3-6 Replacements & Calibration 3-15

Chapter 4 Exploded View & Part List

- 4-1 CW29M064N2XXEC 4-1

Chapter 5 Electrical Part List

- 5-1 CW29M064N2XXEC 5-1

Chapter 6 Troubleshooting

- 6-1 Checkpoints by Error Mode 6-1
- 6-2 Trouble-shooting with New Features 6-3
- 6-3 Troubleshooting Procedures by Error Modes 6-6

Chapter 7 Block Diagram

- 7-1 Overall Block Diagram 7-1
- 7-2 Partial Block Diagram 7-2

Chapter 8 Wiring Diagram

- 8-1 Overall Wiring 8-1
- 8-2 Pin Connection 8-2

Chapter 9 PCB Diagram

- 9-1 Main Board 9-1
- 9-2 PIP Module 9-3
- 9-3 CRT Board 9-5

Chapter 10 Schematic Diagram

- 10-1 POWER & DEFLECTION BLOCK 10-1
- 10-2 IF & UOC(CHROMA_MICOM)BLOCK 10-2
- 10-3 PIP & CRT BLOCK 10-3
- 10-4 AV & SOUND BLOCK 10-4

Chapter 11 Operation Instruction & Installation

- 11-1 Product Features and Functions 11-1

Chapter 12 Disassembly & Reassembly

- 12-1 Overhaul Disassembly & Reassembly 12-1

Chapter 13 Circuit Description

- 13-1 Circuit Key Point 13-1

Chapter 14 Reference Information

- 14-1 Other issues related to other products 14-1
- 14-2 Technical Terms 14-3

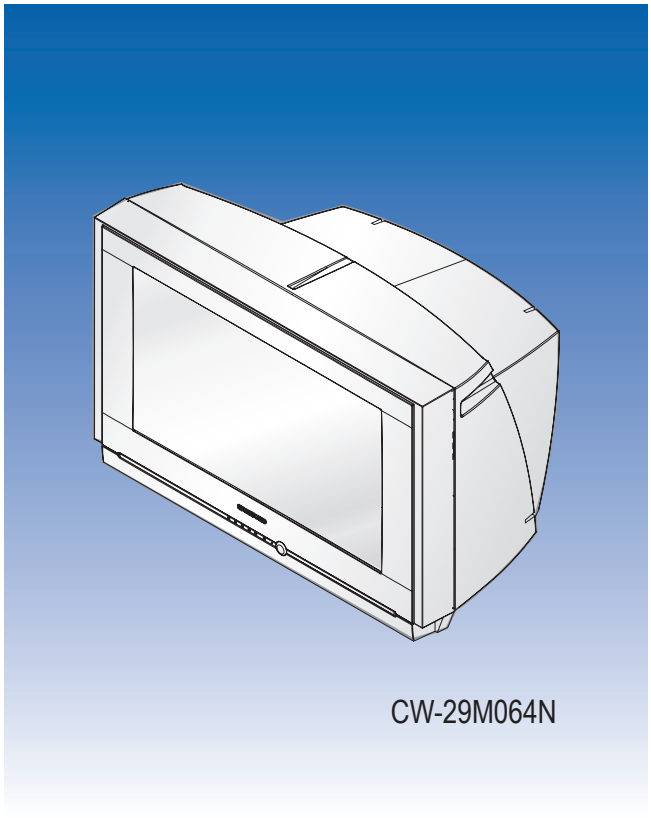
SAMSUNG

COLOR TELEVISION RECEIVER

Chassis : S16A(P)_GREEN-2
Model : CW29M064N2XXEC

SERVICE Manual

COLOR TELEVISION RECEIVER



CW-29M064N

FEATURES

- Green CRT
- Multi Wide System
- LNA Plus(Low Noise Amplifier)
- Turbo Plus
- DNIe jr.
- Low Stand-By Power Wattage
- SOUND Equalizer

ELECTRONICS

This Service Manual is a property of Samsung Electronics Co.,Ltd.
Any unauthorized use of Manual can be punished under applicable
International and/or domestic law.

© Samsung Electronics Co., Ltd. **Aug. 2005**
Printed in Korea
AA82-02809A

Table of Contents

Chapter 1 Precaution

- 1-1 Safety Precautions 1-1
- 1-2 Servicing Precautions 1-3
- 1-3 Static Electricity Precautions 1-4
- 1-4 Installation Precautions 1-5

Chapter 2 Product Specification

- 2-1 Product Features 2-1
- 2-2 Key Features 2-2
- 2-3 Specifications Analysis 2-3
- 2-4 Accessories 2-4

Chapter 3 Alignment & Adjustment

- 3-1 Service Instruction 3-1
- 3-2 How to Access Service Mode 3-2
- 3-3 Factory Data 3-3
- 3-4 Service Adjustment 3-9
- 3-5 Software Upgrade 3-11
- 3-6 Replacements & Calibration 3-15

Chapter 4 Exploded View & Part List

- 4-1 CW29M064N2XXEC 4-1

Chapter 5 Electrical Part List

- 5-1 CW29M064N2XXEC 5-1

Chapter 6 Troubleshooting

- 6-1 Checkpoints by Error Mode 6-1
- 6-2 Trouble-shooting with New Features 6-3
- 6-3 Troubleshooting Procedures by Error Modes 6-6

Chapter 7 Block Diagram

- 7-1 Overall Block Diagram 7-1
- 7-2 Partial Block Diagram 7-2

Chapter 8 Wiring Diagram

- 8-1 Overall Wiring 8-1
- 8-2 Pin Connection 8-2

Chapter 9 PCB Diagram

- 9-1 Main Board 9-1
- 9-2 PIP Module 9-3
- 9-3 CRT Board 9-5

Chapter 10 Schematic Diagram

- 10-1 POWER & DEFLECTION BLOCK 10-1
- 10-2 IF & UOC(CHROMA_MICOM)BLOCK 10-2
- 10-3 PIP & CRT BLOCK 10-3
- 10-4 AV & SOUND BLOCK 10-4

3. Alignment & Adjustment

3-1 Service Instruction

1. General Adjustment :
   In general, a color TV can provide ideal visual quality by adjusting the basic settings such as the vertical size, horizontal size, focus, etc.
   Display a black and white picture on the screen to check if the picture is clearly displayed.
   If there are some 'spotted' points on the screen when displaying a black and white picture, degauss the screen using the degauss coil. If the spotted points remain, re-adjust the purity and the convergence.
   This completes the basic performance examination.

   ⚠ Notice.
   - ■ These adjustments and the check list are only applied to S16A chassis-applied models.
   - ■ Only use 230V for the measurement set. It is recommended using an insulation transformer when supplying power to the set so as to prevent shock to the set or to yourself.
   - ■ These adjustment specifications have been created on the basis of the domestic S16A chassis-applied remote control model. Some of the contents may be changed subject to the sales location and the product specifications.

※ When replacing the Module Service Instruction

1. When replacing the MAIN Board : Tilt adjustment, Focus adjustment, Screen voltage, W/B adjustment are all required. Since the settings including the Channel information,Deflection, etc. are saved to the EEPROM, recogfigure these settings when replacing the MAIN Board.
   The notation of the software information : T-GRN2PEU-1000 refer to "GREEN2 BASIC MODEL EUROPE. ver.1000"
   Since the settings including the Channel information, Deflection, etc. are saved to the EEPROM, recogfigure these settings when replacing the MAIN Board.

2. When replacing the CRT Ass'y : No adjustments required

3. When replacing the front panel Master Power switch : No adjustments required

4. When replacing the Side AV Ass'y : No adjustments required

5. When replacing the PIP Module : No adjustments required

6. When replacing the Control Ass'y : No adjustments required

7. When replacing the PFC Ass'y : No adjustments required

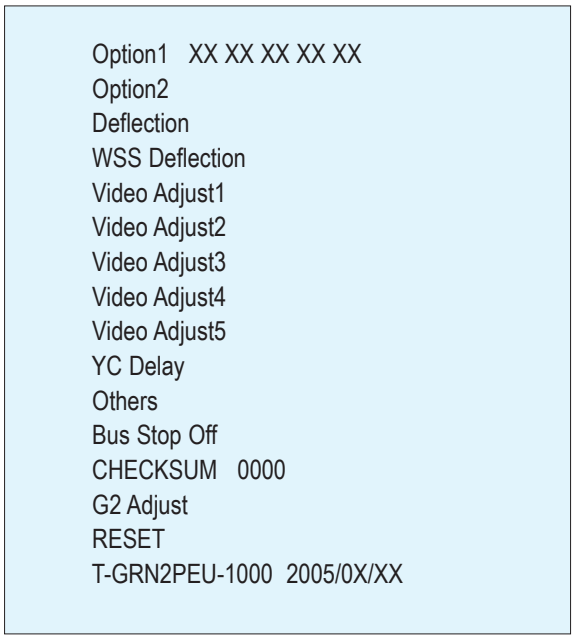
3-2 How to Access Service Mode

1. To enter Service Mode, press the keys on the remote control according to the following sequence. (in Stand-by status)

   Info → Menu → Mute → Power On

   ※ When failing to enter Service Mode, repeat the procedure above.

2. The initial screen of Service Mode.



3. Functions of the Keys within Service Mode.

MENU	Show all menus
▲ / ▼	Move the cursor to select an item.
◀ / ▶	Adjust the selected configuration value

4. W/B Setting

No	Item	Data	Required Adjustment
1	White Balance	x:272± 3 y:270± 3 Y:50± 3 x:265± 3 y:266± 3 Y:2.0± .3	White Balance (Standard Data)
2	Screen Voltage	Toshiba Pattern G2 Adjust	Same as ET Basic Model

3-3 Factory Data

1. Option1

	EU 21"/AK-CRT/Non -PIP/Non-LNA	CIS 21"/AK-CRT/Non -PIP/LNA	EU 29"/GREEN-CRT/2T -PIP/Non-LNA	Southeast Asia 29"/GREEN-CRT/2T -PIP/LNA	CIS 29"/GREEN-CRT/2T -PIP/LNA	Remark
Option1	22 46 09 40 80	22 E6 08 40 80	2A 47 88 40 81	2A E7 88 40 81	2A E7 88 40 81	
1.Video Mute	900msec	900msec	900msec	900msec	900msec	
2.System	CW	CS	CW	CS	CS	
3.AV Jack	2SCART	2SCART	2SCART+S	2RCA+DVD	2SCART+S	
4.CRT	4:3 Zoom	4:3 Zoom	4:3 Zoom/16:9	4:3 Zoom/16:9	4:3 Zoom/16:9	
5.Sound	NICAM	NICAM	NICAM	NICAM	NICAM	
6.Volume Curve	Large	Large	Large	Large	Large	
7.Initial Lang.	English	English	English	English	English	
8.TTX	Osd Language	Osd Language	Osd Language	Osd Language	Osd Language	
9.TTX Flof/List	Flof	Flof	Flof	Flof	Flof	
10.Tilt	Off	Off	On	On	On	
11.LNA	Off	On	Off	On	On	
12.DNIe JR	Off	Off	Off	Off	Off	
13.Hotel Mode	Off	Off	Off	Off	Off	
14.PIP	Off	Off	2-Tuner	2-Tuner	2-Tuner	

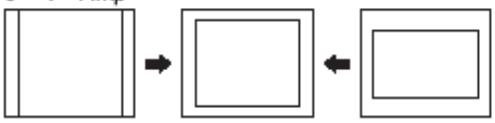
2. Option2

	EU 21"/AK-CRT/Non -PIP/Non-LNA	CIS 21"/AK-CRT/Non -PIP/LNA	EU 29"/GREEN-CRT/2T -PIP/Non-LNA	Southeast Asia 29"/GREEN-CRT/2T -PIP/LNA	CIS 29"/GREEN-CRT/2T -PIP/LNA	Remark
Option2	22 46 09 40 80	22 E6 08 40 80	2A 47 88 40 81	2A E7 88 40 81	2A E7 88 40 81	
1.X-Ray Protect	On	On	On	On	On	
2.HighDeviation	Off	Off	Off	Off	Off	
3.V-Guard	On	On	On	On	On	
4.Sound Carrier Mute	On	On	On	On	On	

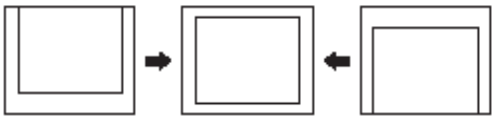
3.Deflection

No	Item	Adjust	EU /21" AK /Non-PIP /Non-LNA	Standard SEAT	Southeast Asia 29"/GREEN CRT /2T-PIP/LNA	Remark
	Deflection					
1	V Amp	Adj/Com	32	30	32	
2	V Shift	Adj/Com	32	17	32	
3	H EW	Adj/Opt	32	32	32	29" Only
4	H Shift	Adj/Com	32	38	32	By Inch
5	V Linearity	FIX/Opt	40	40	40	
6	V S-Correction	FIX	32	25	32	
7	V Slope	FIX	25	25	25	
8	V Scroll	FIX	32	32	32	
9	V Zoom	FIX	45	45	45	
10	H Parabola	Adj/Opt	FIX/32	32	FIX/32	29" Only
11	Upper Corner	Adj/Opt	FIX/32	32	FIX/32	29" Only
12	Lower Corner	Adj/Opt	FIX/32	32	FIX/32	29" Only
13	H Trapezium	Adj/Opt	FIX/32	32	FIX/32	29" Only
14	Bow	Adj/Opt	FIX/32	32	FIX/32	29" Only
15	Angle	Adj/Opt	FIX/32	32	FIX/32	29" Only
	WSS Deflection					
1	16:9 V Amp	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
2	16:9 V Shift	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
3	16:9 H Parabola	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
4	16:9 H Trapezium	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
5	14:9 V Amp	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
6	14:9 V Shift	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
7	14:9 H Parabola	Adj/Opt	FIX/32	32	FIX/32	WIDE Only
8	14:9 H Trapezium	Adj/Opt	FIX/32	32	FIX/32	WIDE Only

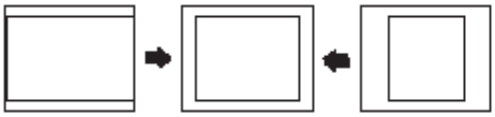
0 V - Amp



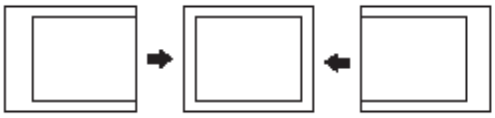
1 V-Shift



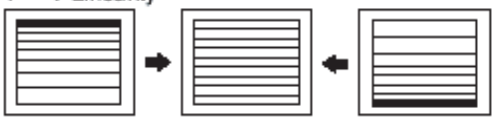
2 H-EW



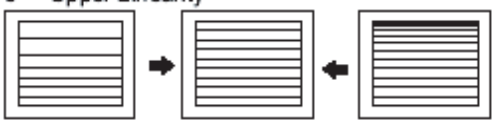
3 H-Shift



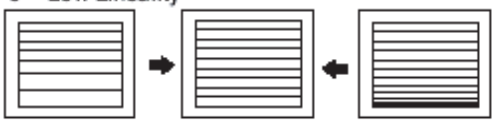
4 V-Linearity



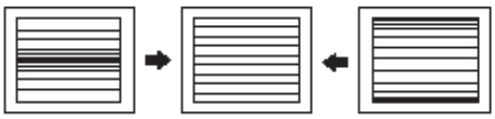
5 Upper Linearity



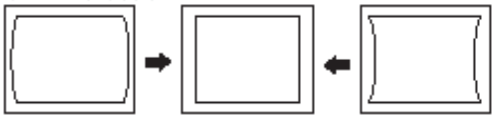
6 Low Linearity



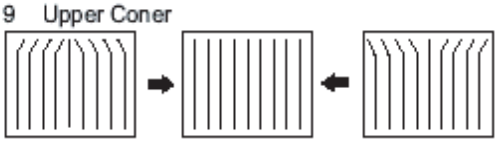
7 V SC



8 H-Parabola

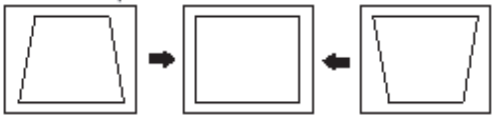


9 Upper Coner

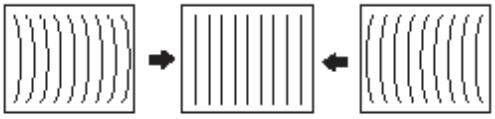


10 Low Coner

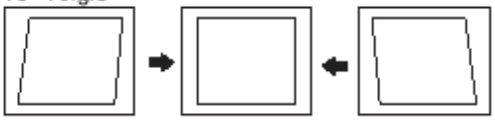
11 H- Trapezuim



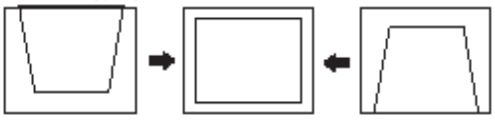
12 Bow



13 Angle



14 V Position



4. Video Adjust 1~5

* Video Adjust 1

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	R Cutoff	Adj/Com	32	37	32	
2	B Cutoff	Adj/Com	32	49	32	
3	R Drive	Adj/Com	32	36	32	
4	G Drive	FIX	32	32	32	
5	B Drive	Adj/Com	32	42	32	
6	Sub Bright	Adj/Com	10	16	10	
7	Sub Contrast	Adj/Com	10	14	10	
8	PAL/SECAM Sub Color	FIX	15	15	15	
9	NTSC Sub Color	FIX	10	5	10	
10	NTSC Sub Tint	FIX	12	12	12	
11	YUV Sub Tint	FIX	18	12	18	
12	AKB Option	FIX	0	0	0	
13	Peakng CF0 & Delay Mode	FIX	3	3	3	
14	Sub Sharpness-RF	FIX	23	15	23	

* Video Adjust 2

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	Melody Volume	FIX	35	35	35	
2	RF AGC	Opt/Fix	24	24	24	LNA/N-LNA
3	RF AGC Speed	FIX	1	1	1	
4	VM Mode	FIX	1	1	1	
5	VM Gain	FIX	1	1	1	
6	VM Delay	FIX	5	5	5	
7	Blue Stretch	FIX	1	1	1	
8	G2 Adjust Bright	FIX	32	52	32	
9	Soft Clipping Level	FIX	0	0	0	
10	Peak White Limit	FIX	15	15	15	
11	Cathode Drive Level	FIX	11	7	11	
12	SECAM B-Y Offset	FIX	1	1	1	
13	IF Demodulator	FIX	38	38	38	
14	Fast Filter IF PLL	FIX	0	0	0	

* Video Adjust 3

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	PIP Contrast	Opt/Fix	7	7	7	PIP Only
2	PIP Bright	Opt/Fix	7	7	15	PIP Only
3	PIP Tint	Opt/Fix	32	32	32	PIP Only
4	PIP Color	Opt/Fix	7	7	8	PIP Only
5	PIP YC Delay	Opt/Fix	8	8	12	PIP Only
6	PIP PAL V. Pos	Opt/Fix	0	0	0	PIP Only
7	PIP NTSC V. pos	Opt/Fix	0	0	0	PIP Only
8	PIP H. Pos	Opt/Fix	0	0	0	PIP Only
9	PIP R Cutoff	Opt/Fix	7	7	7	PIP Only
10	PIP G Cutoff	Opt/Fix	7	7	7	PIP Only
11	PIP B Cutoff	Opt/Fix	7	7	7	PIP Only
12	PIP R Drive	Opt/Fix	50	50	88	PIP Only
13	PIP G Drive	Opt/Fix	50	50	88	PIP Only
14	PIP B Drive	Opt/Fix	50	50	88	PIP Only

* Video Adjust 4

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	IF Preset Value 1	FIX	32		32	
2	IF Preset Value 2	FIX	32		32	
3	IF PLL Osc Preset Value	FIX	0		0	
4	Preset Gain R	FIX	20		20	
5	Preset Gain G	FIX	20		20	
6	Preset Gain B	FIX	20		20	
7	TTX Bright	FIX	10		10	
8	TTX RGB Bright	FIX	15		15	
9	TTX Position	FIX	10		10	
10	Turbo Center Frequency	FIX	2		2	
11	Threshold Sound1 Carrier	FIX	30		30	
12	DCXO Caps/NICAM Center	FIX	55		55	
13	DCXO Scaling Control Gain	FIX	3		3	

* Video Adjust 5

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	System I Output Signal AMP	FIX	0	0	0	
2	Bypass of Chroma Base Band	FIX	0	0	0	
3	Fixed Beam Current	FIX	0	0	0	
4	Fixed Beam Current1	FIX	0	0	0	
5	IF Sensitity	FIX	0	0	0	
6	Forced Colour On	FIX	0	0	0	
7	Enable Digital Interface	FIX	0	0	0	
8	Sync Performance Trick Mode	FIX	0	0	0	
9	Vertical Overscan	FIX	0	0	0	
10	Beam Current Limiting	FIX	0	0	0	
11	Comb Filter	FIX	0	0	0	
12	De Interlace	FIX	0	0	0	
13	Chroma Trap Mode	FIX	0	0	0	
14	Black Current Measure Line	FIX	0	0	0	
15	EHT Tracking Mode	FIX	1	1	1	

5. YC Delay

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	PAL Delay	FIX	12	12	12	
2	SECAM Delay	FIX	12	12	12	
3	NTSC Delay	FIX	12	12	12	
4	PAL AV Delay	FIX	12	12	12	
5	SECAM AV Delay	FIX	12	12	12	
6	NTSC AV Delay	FIX	12	12	12	

6. Others

No	Item	Adjust	EU	Standard SET	Southeast Asia	Remark
1	Service Blanking	FIX	0	0	0	
2	High Current Level	FIX	1	0	1	
3	Black Area	FIX	2	2	2	
4	Black Stretch	FIX	2	2	1	
5	OSD Brightness	FIX	15	15	15	
6	PWL Active	FIX	1	1	1	
7	Bypass Peaking Delay	FIX	0	0	0	
8	Ratio Pre & After Shoot	FIX	2	3	0	
9	Ratio posi & Nega Peaks	FIX	2	2	0	
10	Dynamic Skin Control	FIX	0	0	0	
11	Gamma & White Stretch	FIX	1	1	0	
12	Video Dependent Coring	FIX	1	0	0	
13	PAL/NTSC Ident Sensitivity	FIX	3	3	1	
14	Comb Filter Diode Clamp	FIX	1	1	1	
15	DC Transfer Ratio	FIX	0	1	1	

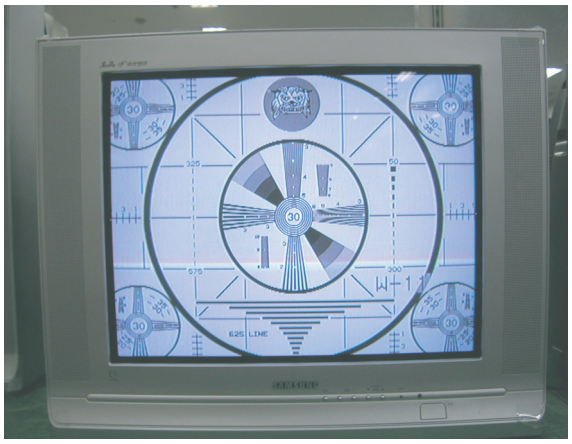
WHITE BALANCE	H	272/270 50FL		272/270 35FL	
	L	265/266 2.0FL		265/266 2.5FL	

3-4 Service Adjustment

3-4-1 Adjusting the Picture Size

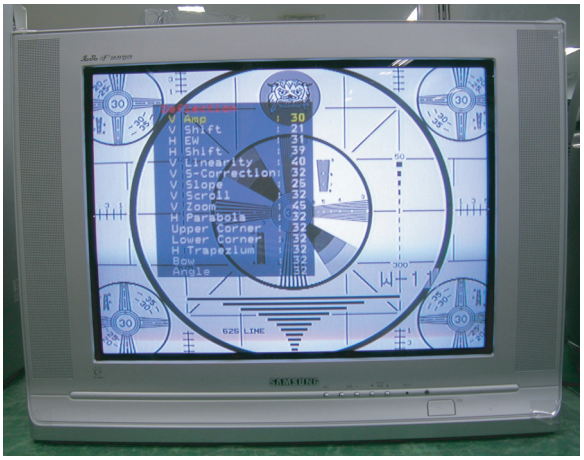
■ Since the S16A chassis has the deflection settings data within the Factory Data, the picture size has to be adjusted when replacing the Main Board or the VCTi Module, according to the following procedures.

① Display the Lion pattern.

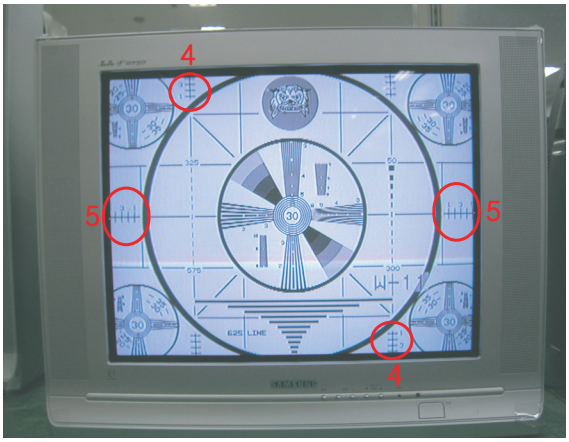


② Press "Power Off →Info → Menu → Mute → Power On" using the remote control and enter Factory Mode.

③ Enter Deflection Mode.

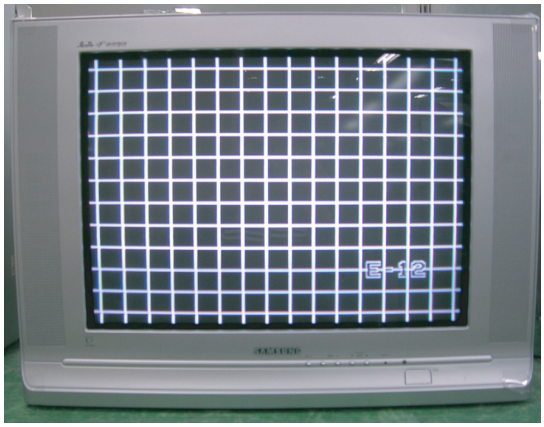


④ Adjust the V-AMP, V-SHIFT, H-AMP and H-SHIFT items so that the width becomes 5 and the height becomes 4.



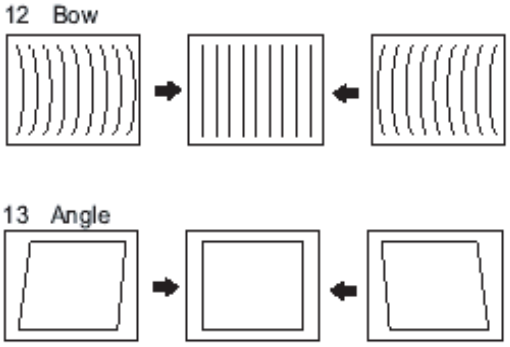
3-4-2 Adjusting the Picture Straight Lines

① Display the Cross Hatch pattern.

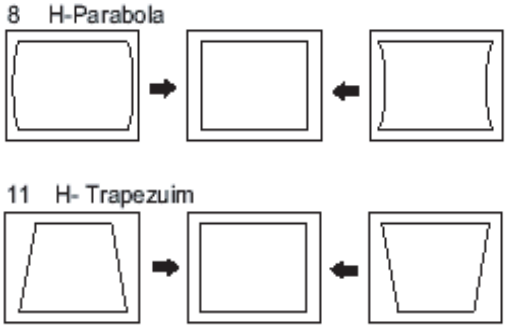


② Adjust settings other than V-AMP, V-SHIFT, H-AMP and H-SHIFT so that straight lines are displayed without curves.

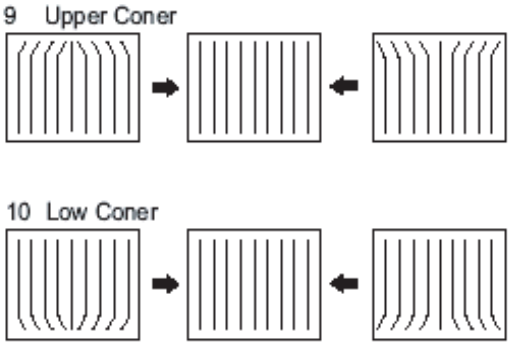
③ Adjust BOW and the Angle settings so that the center line becomes a straight line.



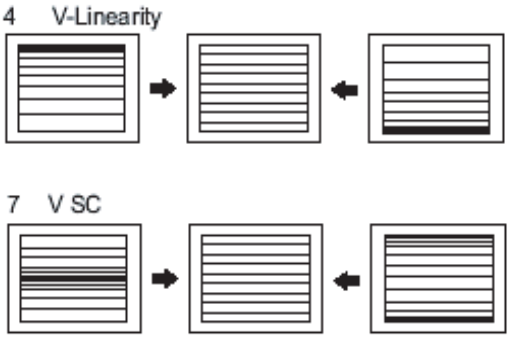
④ Adjust the H-Parabola and H-Trapezium settings so that the left and right lines become straight.



⑤ Adjust the Upper Corner and the Low Corner settings so that the end of the lines become straight.



⑥ Adjust the V-Linearity and V-SC settings so that the intervals of the horizontal lines become uniform.



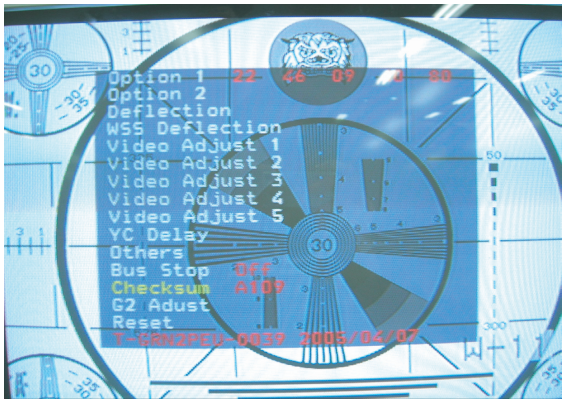
⑦ When the adjustments are complete, display the Lion pattern and check that the picture size has not been changed. If there is no change, finish the adjustments.

3-5 Software Upgrade

3-5-1 Checking the Version of the Software (Analog SW)

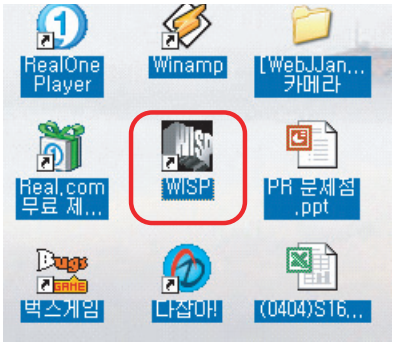
1. To enter Service Mode, press the keys on the remote control according to the following sequence. (in Stand-by status)
   Info → Menu → Mute → Power On

2. When entering Service mode, the software information is displayed at the top of the service mode menu OSD.
   ex) T-GRN2PEU-1000 2005/0X/XX

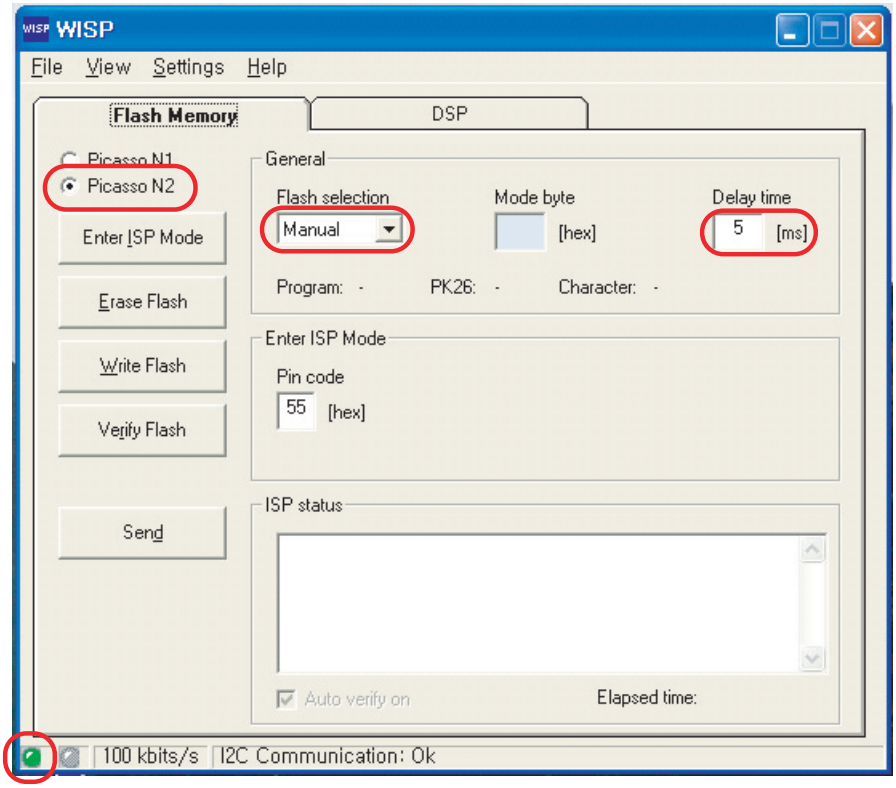


3-5-2 Service Download Procedure

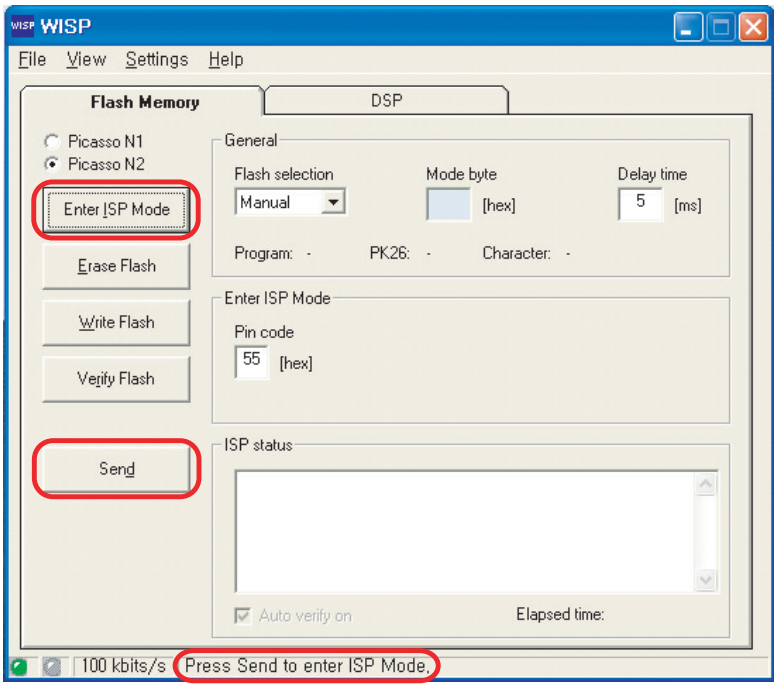
1. Double click the your desktop “WISP” icon.



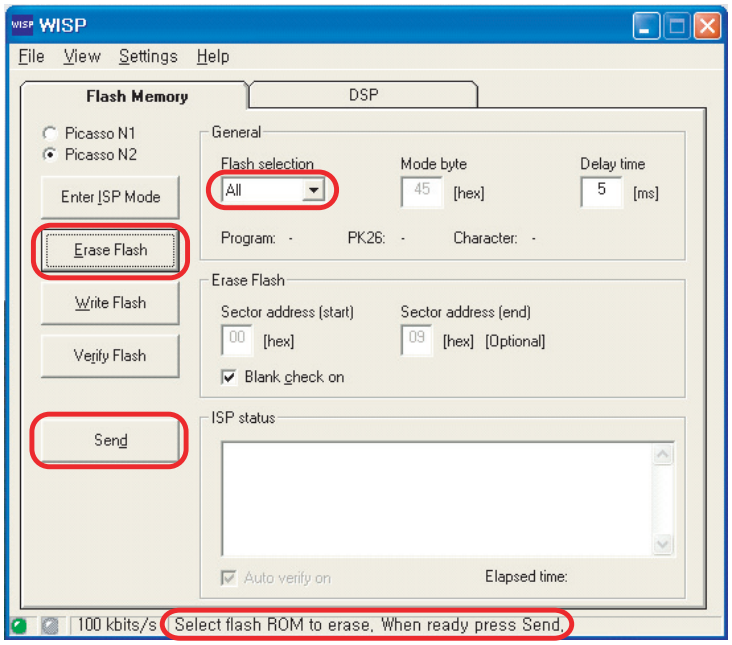
2. Check the standard
   - Check the appoint “Picasso N2”
   - Check the “Flash selection” item is appoint “Manual”
   - You can adjust program delay time for program speed
     but we use the normal “5[ms]”
   - Check the green lamp if this is sometime red lamp you can not programming



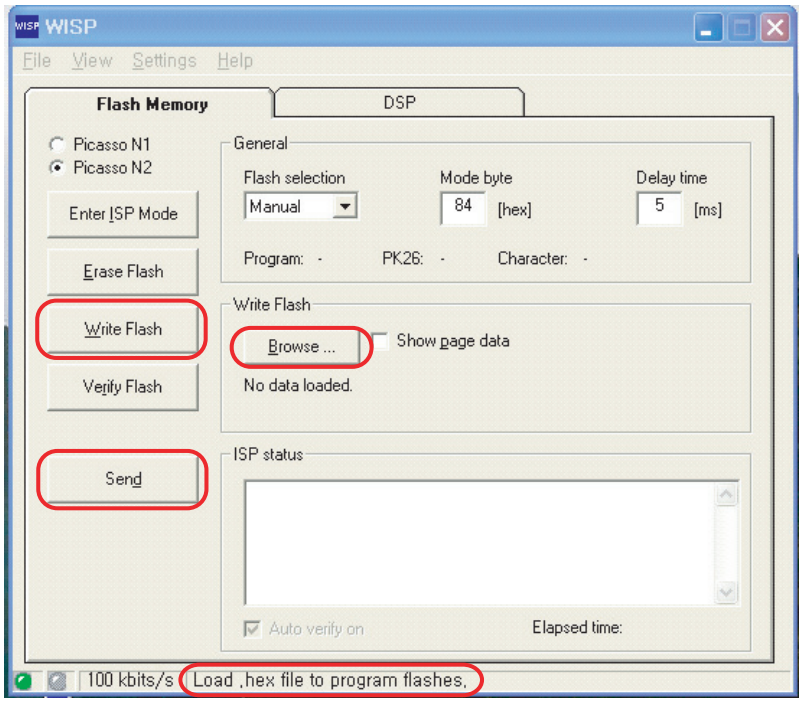
3. Check the IIC line
   - Click the “Enter ISP Mode” button For IIC bus line problem or not
   - Change the “Press Send to enter ISP Mode”
   - Click the “Send” button



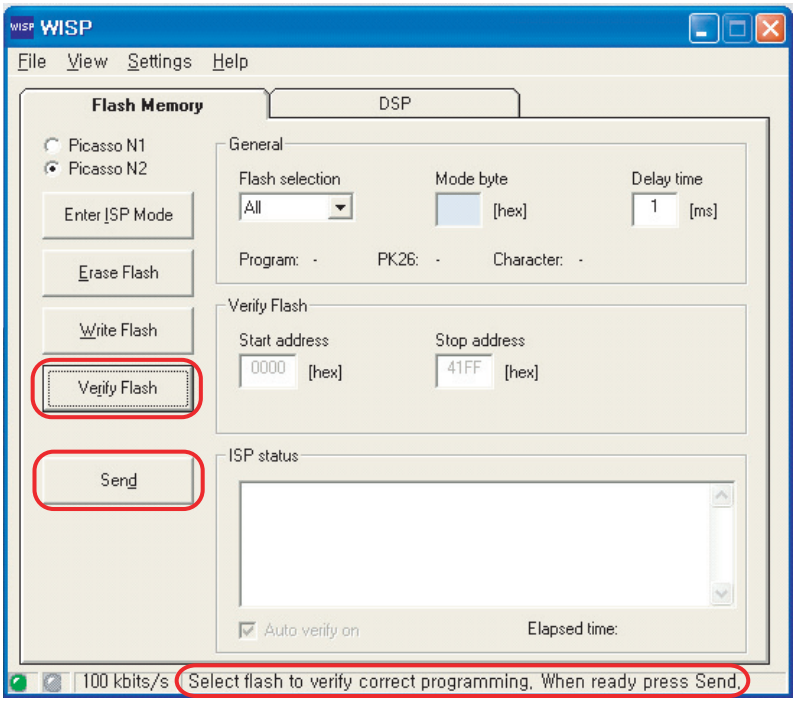
4. Erase before program
   - Click the “Erase Flash” button for before program erase
   - You can select flash selection item but we use normal “All” mode
   - Change the “Select flash ROM to erase. When ready press Send.”
   - Click the “Send” button



5. Write new program
   - Click the “Write Flash” button for new program download
   - Change the “Load.hex file to program flashes.”
   - Click the “Browse” button and find the new program folder in your computer
   - Click the “Send” button



6. Verify new program
   - Click the “Verify Flash” button
   - Change the “Select flash to verify correct programming.
     When ready press Send.”
   - Click the “Send” button

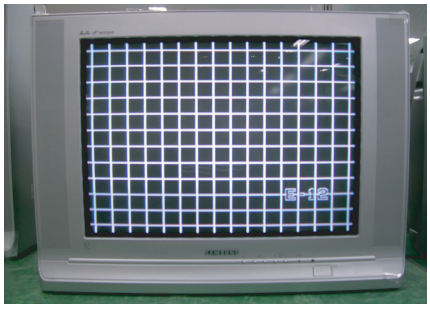


3-6 Replacements & Calibration

3-6-1 Adjusting the Focus

■ Since the S59B chassis has a built-in single focus circuit, take care when adjusting the focus. When the CRT PCB, FBT or CRT has been replaced, the focus has to be adjusted according to the following procedures.

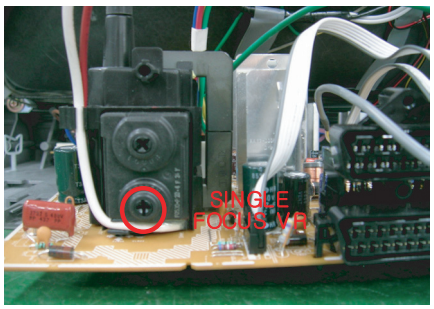
1. Display the CROSS Hatch pattern. →



2. Set the Screen Adjustment to "View as Standard".

3. Turn the Static Focus VR clockwise to the maximum position.
   (End of clockwise direction)

4. Slowly turn the Static Focus VR counter clockwise so that the center vertical line is the most clearly displayed. [adjusted point : Center(2/1)]



5. Check the entire screen focus and repeat steps 3 to 4, if necessary.

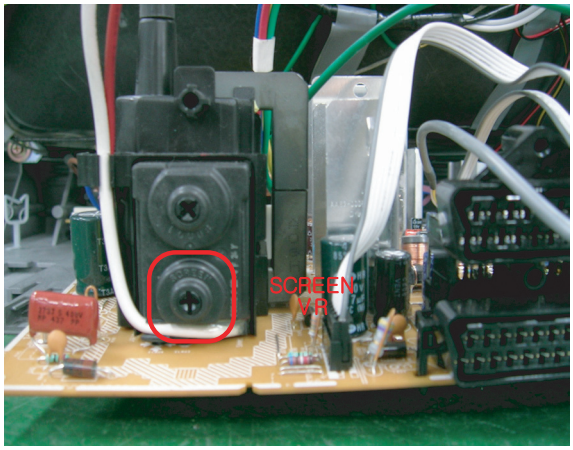
3-6-2 Adjusting the Screen Voltage

1. Select "Power Off →Info → Menu → Mute → Power On" to enter Service Mode.

2. Initialize all settings to the values appropriate to the corresponding model.

3. Display the Toshiba pattern.

4. First check IBRM in "G2 Adjust" of Factory and adjust Screen VR until the color of IBRM item turns green.



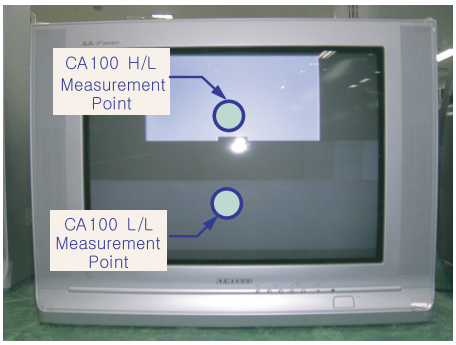
3-6-3 Adjusting the White Balance

1. Initialize all settings to the values appropriate to the corresponding model.

2. Select "Info → Menu → Mute → Power On" to enter Service Mode.

3. Initialize all settings to the values appropriate to the corresponding model.

4. Display the Toshiba pattern and adjust the White Balance using CA100 with the coordinates of the corresponding model.



[CA100]

5. Enter Video Adjust1 of Service Mode. Adjust Low/Light.
   - Adjust Sub Bright to set Y.
   - Adjust B Cutoff to set y.
   - Adjust R Cutoff to set x.

6. Enter Video Adjust1 of Service Mode. Adjust High/Light.
   - Adjust Sub Contrast to set Y.
   - Adjust B Drive to set y.
   - Adjust R Drive to set x.

7. Check Low/Light and readjust it if its value has been changed.

8. If you have readjusted Low/Light, readjust High/Light until the two values are identical to the coordinates of the corresponding model.

※ White Balance Standard Data

No	Item	Data	Required Adjustment
1	White Balance	x:272± 3 y:270± 3 Y:50± 3 x:265± 3 y:266± 3 Y:2.0± .3	White Balance (Standard Data)

3-6-4 Check List for the Screen Voltage and White Balance Adjustment

1. The Screen Voltage and White Balance are connected each other, and both of them have to be configured to the correct values.

2. Adjust the White Balance after the Screen Voltage was adjusted, and check if the Screen Voltage is normal after adjusting the White Balance.

3. If the White Balance is readjusted, check the Screen Voltage again.

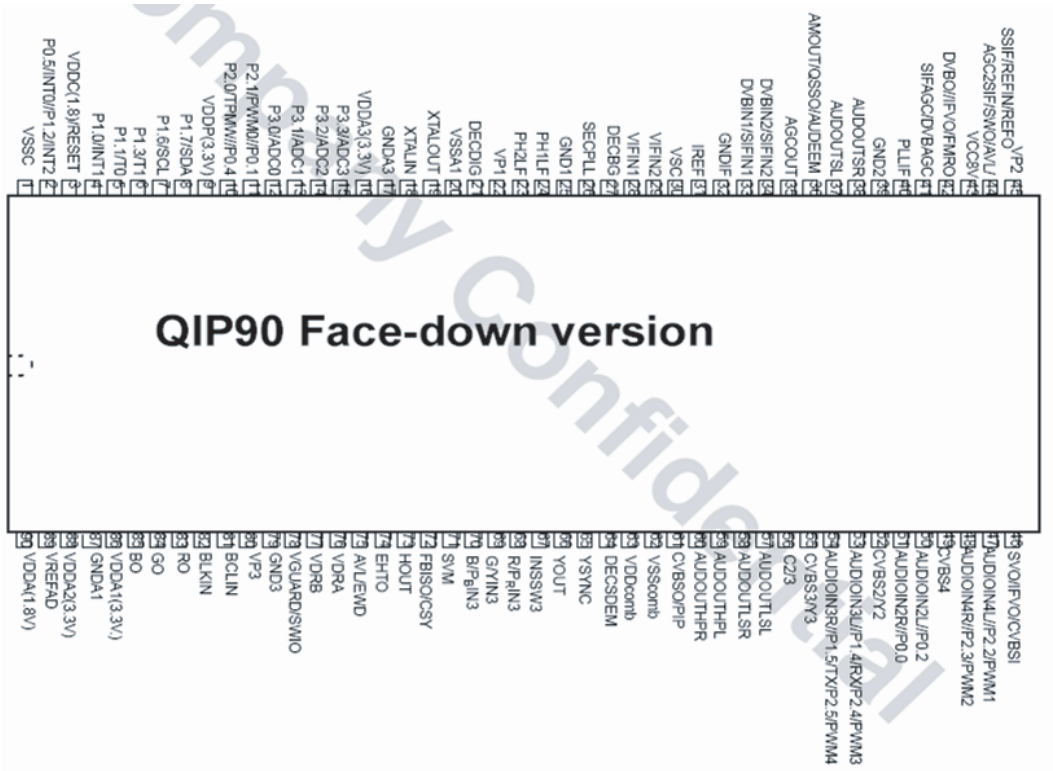
4. When the adjustment is finished, check the following checklist.
   - If there is a spot on the screen when turning the TV set off/on, adjust the Screen Voltage again.
   - If there is a ghost line on the screen, adjust the Screen Voltage again.

MEMO

13. Circuit Description

13-1 Circuit Key Point

13-1-1 Pin configuration of "Face-down" QIP versions



13-1-2 UOC3(TDA120XX) Pin Description

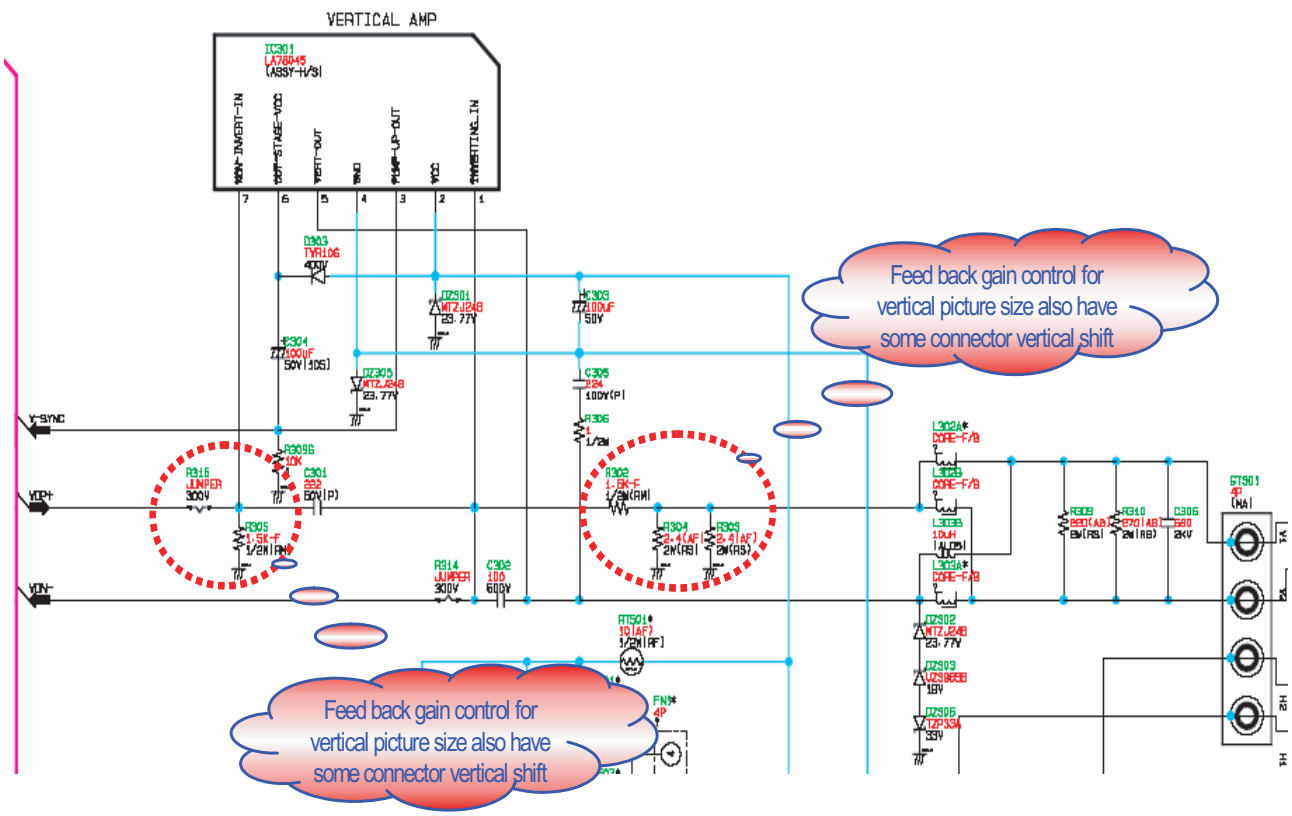
Pin No	Name	Register	Port Type	Initial	Description (Micom Pin 1 ~ 11, 54 ~ 64)
51	pTilt	P0.0	Push Pull		- Tilt
2	pIR	P0.5	Open Drain		- Remocon IR
4	pDcoil	P1.0	Push Pull		- Degaussing Coil
5	pSawFilter	P1.1	Push Pull	1	-NTSC/PAL S/W(PAL : High, NTSC3.58 : Low) -Europe CW L/L' Sound Saw S/W (L' : High, L : Low)
6	pPower	P1.3	Push Pull	0	- High : Power On - Low : Power Off
7	pSCL	P1.6	Push Pull	0	- I2C Bus Clock
8	pSDA	P1.7	Push Pull	0	- I2C Bus Data
10	pLED	P2.0	Push Pull	1	- Led(StandBy Mode, Remocon)
11	pSoundMute	P2.1	Push Pull	1	- High : Sound Mute On - Low : Sound Mute Off
12	pScart1	P3.0	Open Drain		- Scart1 ID - China : Sound Saw Filter S/W(RCA Option Sound M : Low, High)
13	pScart2	P3.1	Open Drain		- Scart2 ID - RCA Jack X-Ray
14	pBusStop	P3.2	Open Drain	1	- Bus Stop Port
15	pPanelKey1	P3.3	Open Drain		- Panel Key 1(Channel up, Channel Down, Volume Up, Volume Down, Menu)

Samsung Confidential

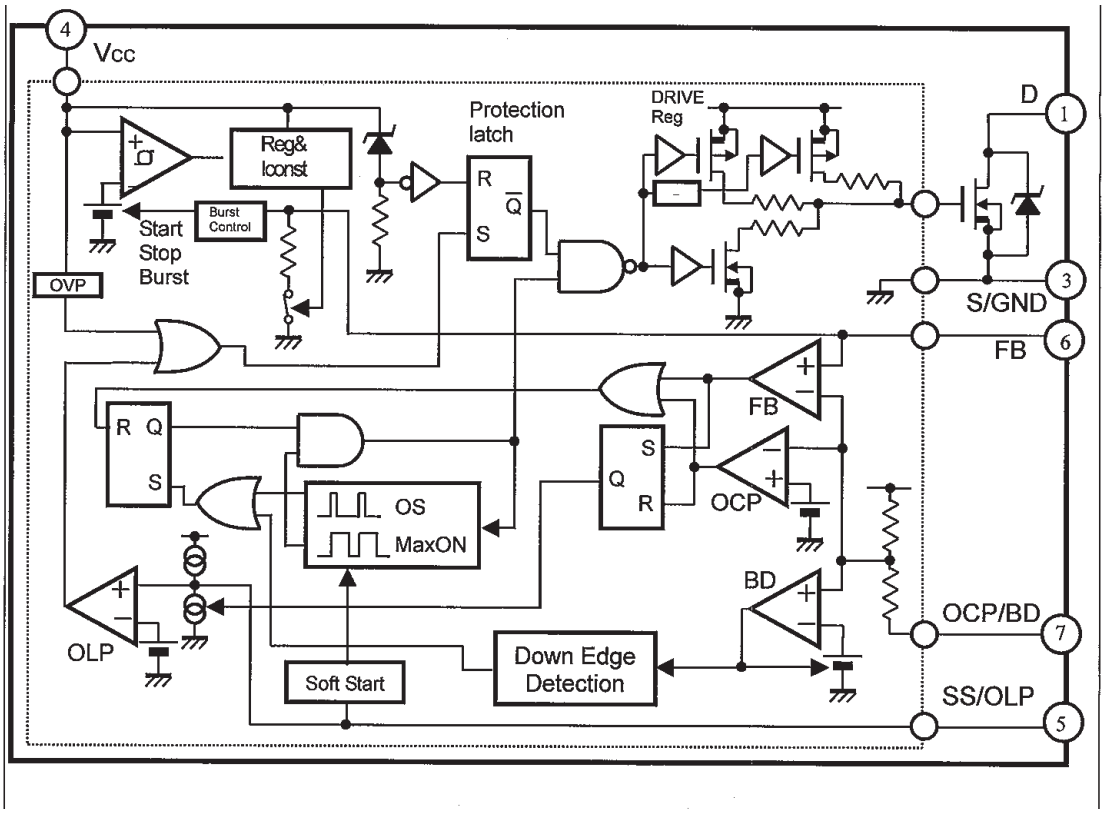
13-1-3 Control System Features

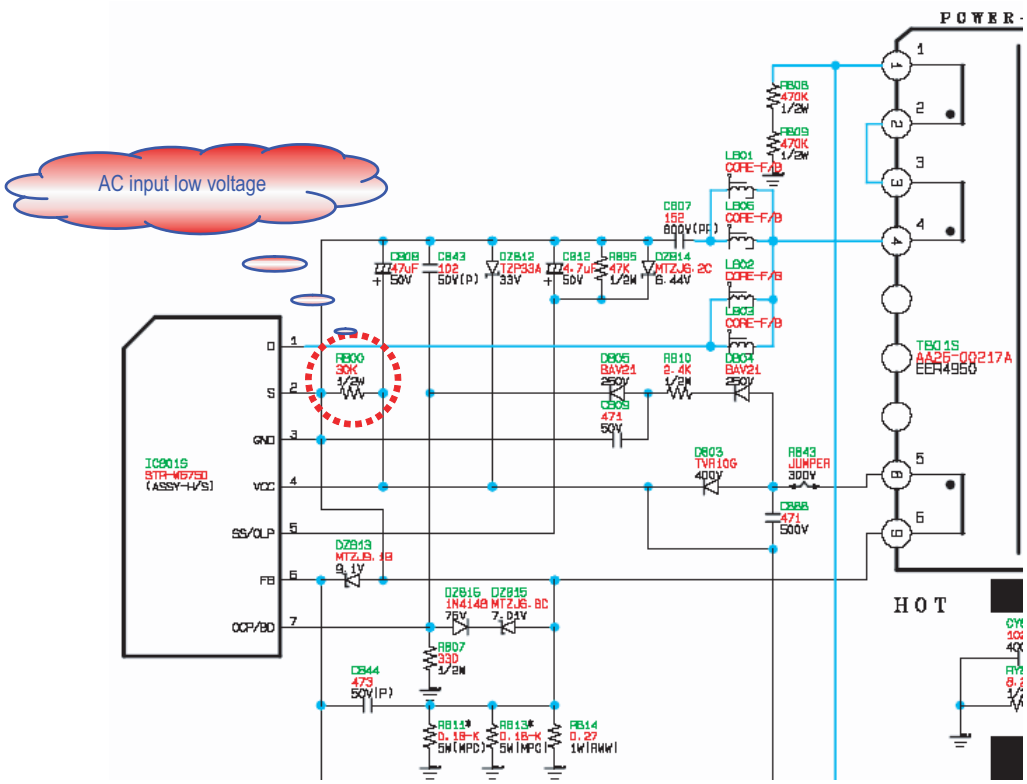
* 80C51 micro-controller core standard instruction set and timing
* 0.4883 ms machine cycle (6 clock cycles with 12.288 MHz derived from an xtal frequency of 24.576MHz)
* maximum 256k x 8-bit program ROM
* maximum of 8k x 8-bit auxiliary RAM
* auxiliary RAM page pointer
* 12-level interrupt controller for individual enable/disable with two level priority
* stand-by, idle and power-down modes
* watchdog timer
* two 16-bit timer/counters
* additional 24-bit timer (16-bit timer with 8-bit Pre-scaler)
* 16-bit data pointer
* five 6-bit pulse width modulator (PWM) outputs for control of TV analogue signals.
* one 14-bit PWM for voltage synthesis tuning control.
* 8-bit ADC with 4 multiplexed inputs.
* remote control pre-processor (RCP).
* I2C byte level bus interface.
* universal asynchronous receiver transmitter (UART)
* 24 General I/O.

13-1-4 Vertical Circuit (LA78045)

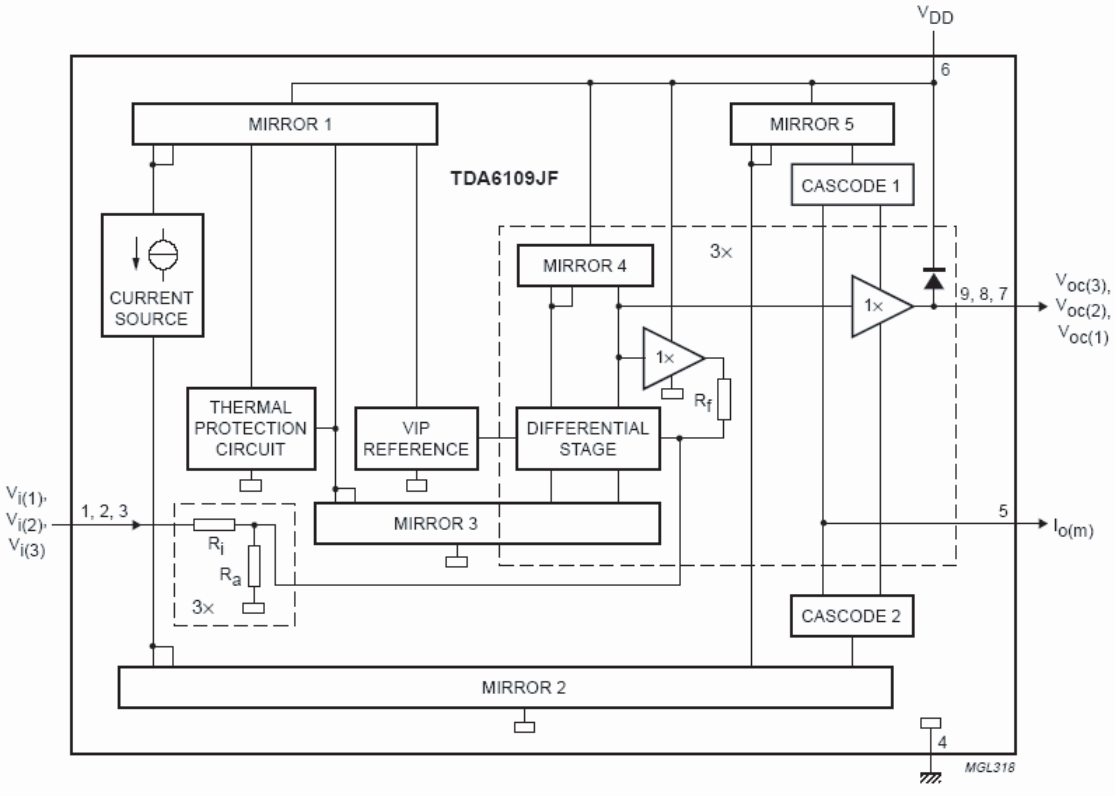

VERTICAL AMP
Feed back gain control for vertical picture size also have some connector vertical shift
Feed back gain control for vertical picture size also have some connector vertical shift

13-1-5 Power IC (STR-W6750F)





13-1-6 TDA6109JF



PINNING

SYMBOL	PIN	DESCRIPTION
$V_{i(1)}$	1	inverting input 1
$V_{i(2)}$	2	inverting input 2
$V_{i(3)}$	3	inverting input 3
GND	4	ground (fin)
I_{om}	5	black current measurement output
V_{DD}	6	supply voltage
$V_{oc(3)}$	7	cathode output 3
$V_{oc(2)}$	8	cathode output 2
$V_{oc(1)}$	9	cathode output 1

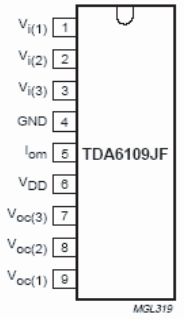


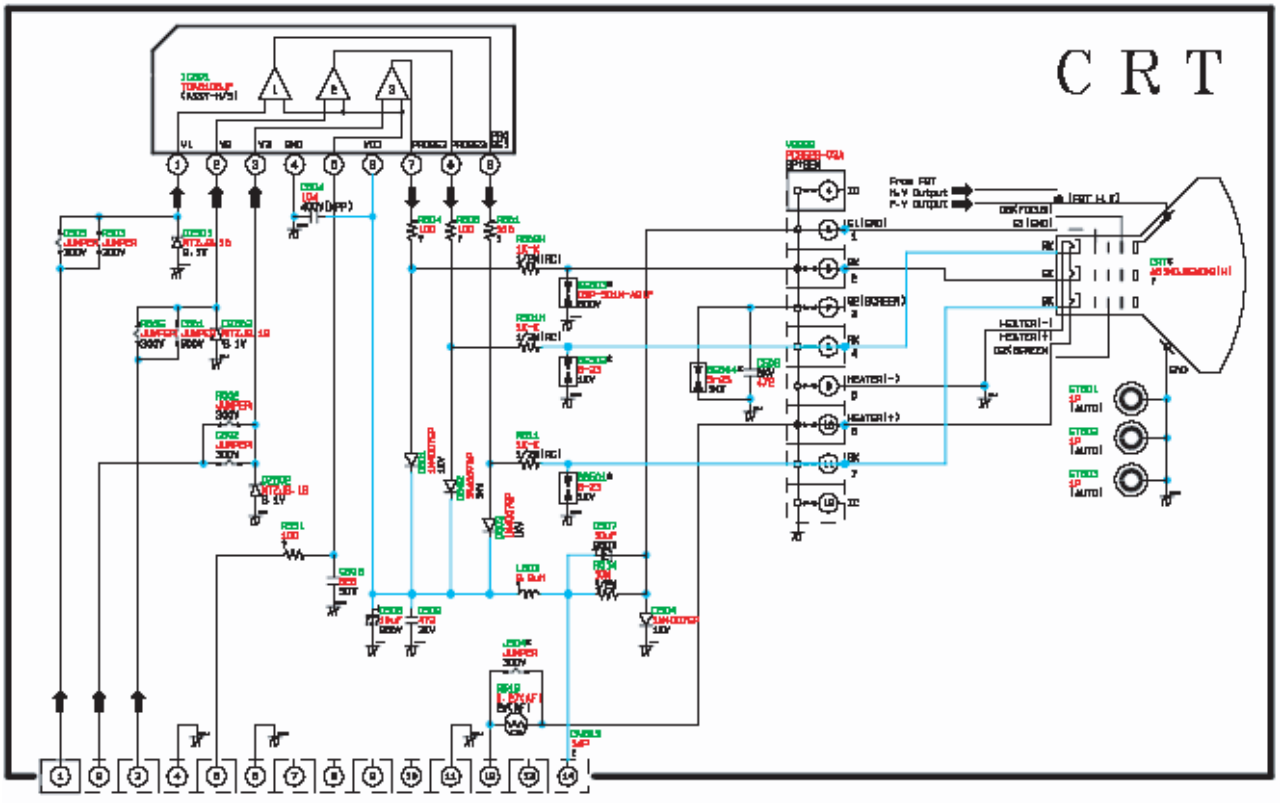
Fig.2 Pin configuration.

LIMITING VALUES

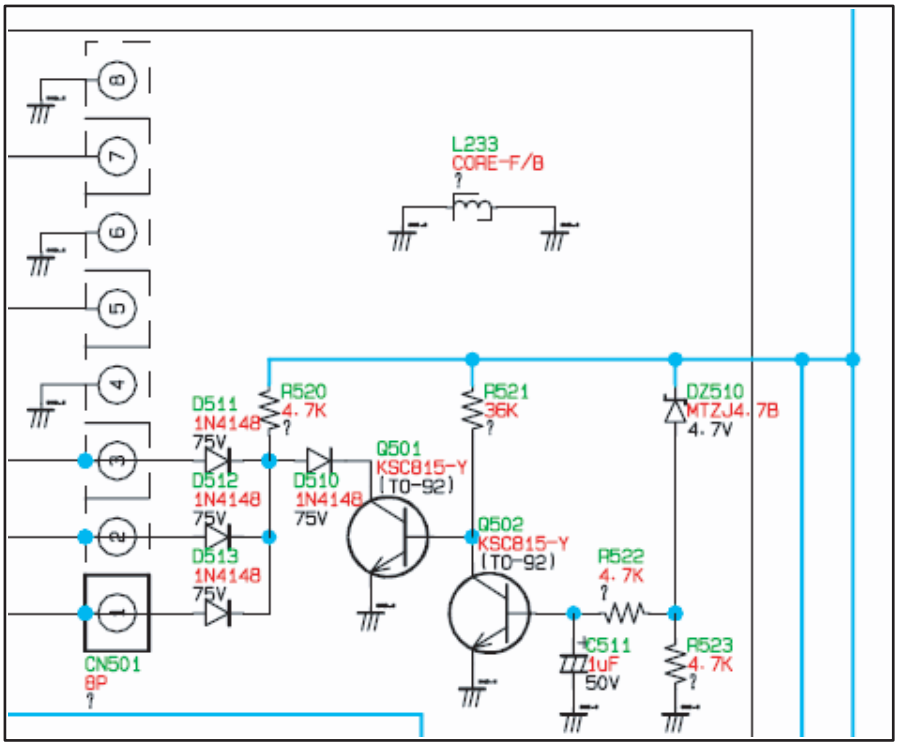
In accordance with the Absolute Maximum Rating System (IEC 134); voltages measured with respect to pin 4 (ground); currents as specified in Fig.1; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DD}	supply voltage		0	250	V
V_i	input voltage		0	12	V
V_{om}	measurement output voltage		0	6	V
V_{oc}	cathode output voltage		0	V_{DD}	V
T_{stg}	storage temperature		–55	+150	°C
T_j	junction temperature		–20	+150	°C
V_{es}	electrostatic handling				
	human body model (HBM)		–	2000	V
	machine model (MM)		–	300	V

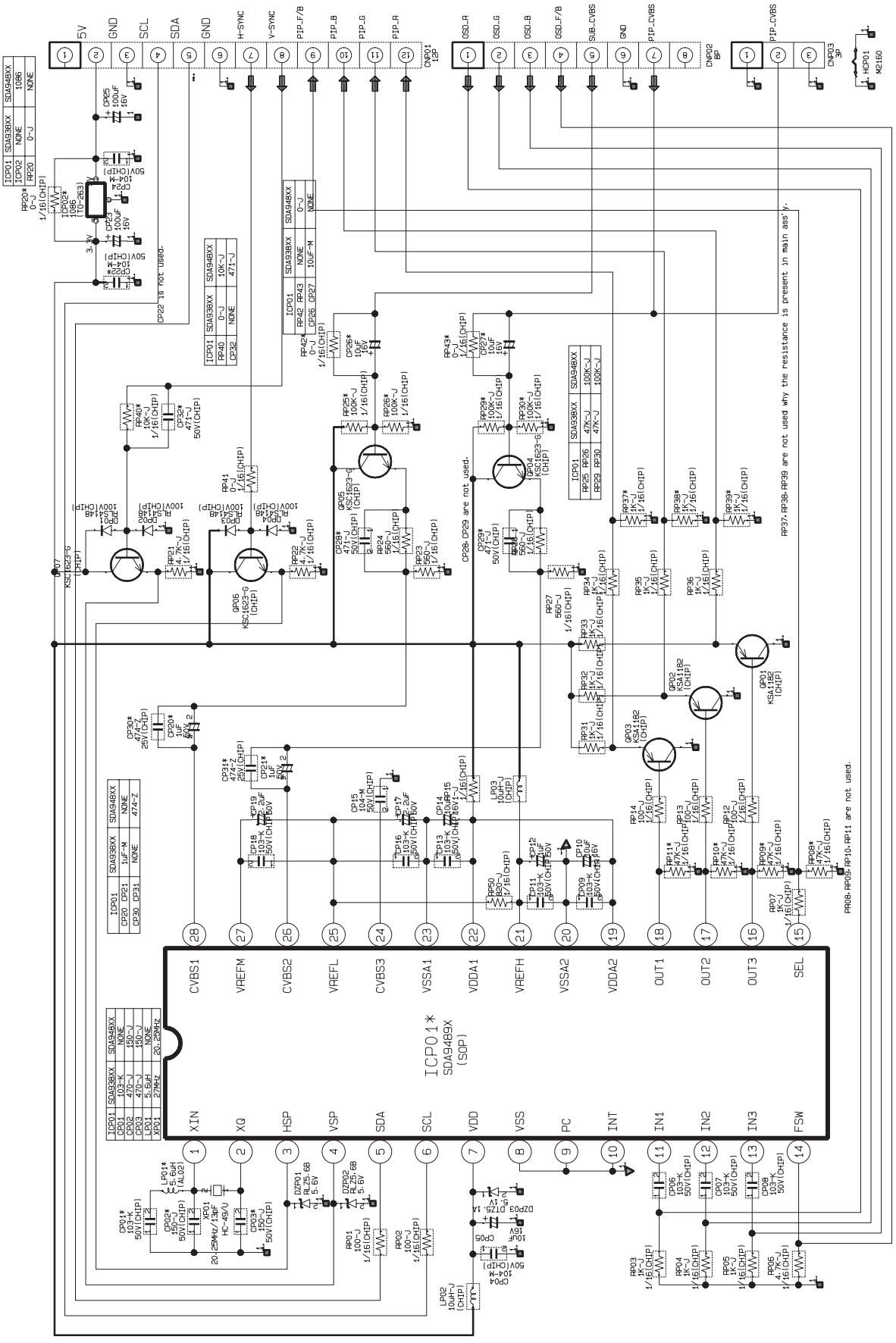
13-1-7 CRT Drive



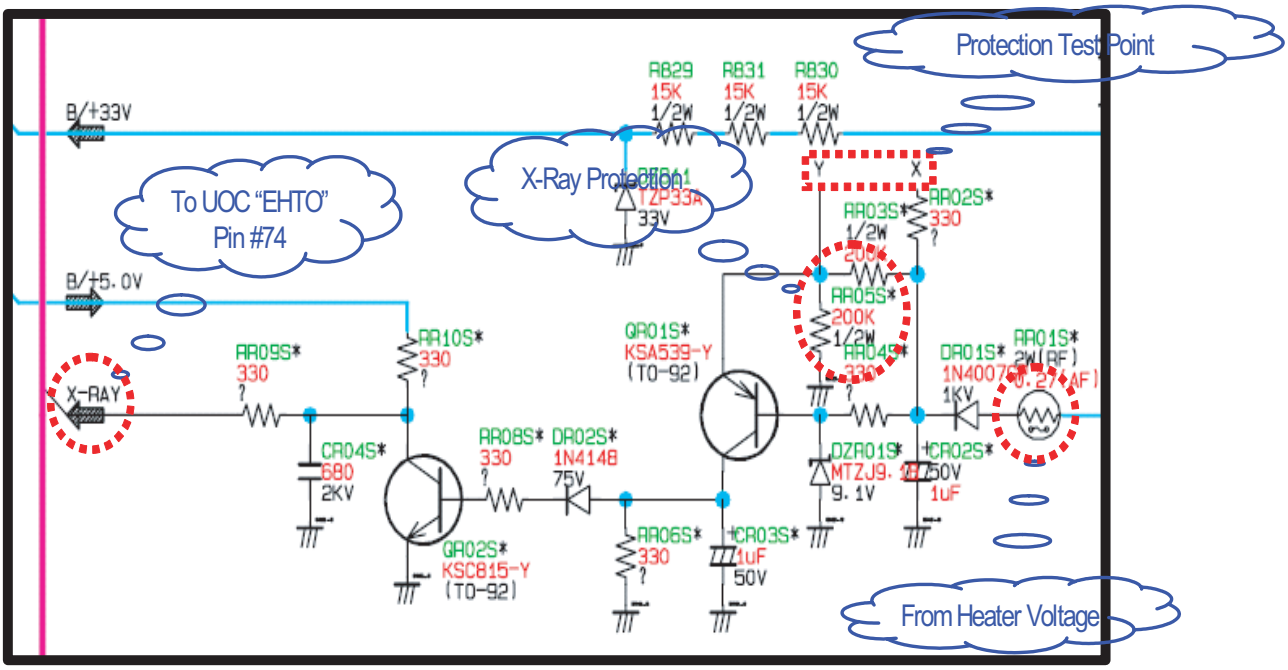
13-1-8 Spot Killer



13-1-9 Picture In Picture



13-1-10 X-Ray Protection



MEMO

14. Reference Information

14-1 Other issues related to other products

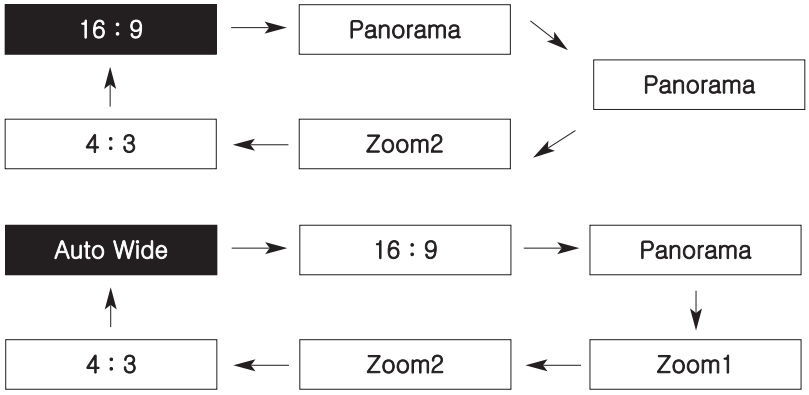
Problem	Descriptions
A fixed screen can cause permanent damage to the TV Braun tube.	Braun, PDP and LCD TVs can all be damaged. When a still image is displayed in a sequence, this can leave stains or after-images due to the characteristics of the panel. However, the DLP TV has the advantage that no stains or after-images are left on the screen. The DLP TV has mirror pixels on the DMD panel that project the beam onto the screen, in which the mirror is a digital representation of 0s and 1s, leaving no trace of light. The mirror returns to a blank state so that no stains or after-images are left.
Confusion between the ANYNET Port and the SERVICE Jack Port	The SAMSUNG SKY500N model has both an ANYNET port and a SERVICE jack port. Because the shape of the ANYNET port on the DLP TV is the same as that of the SERVICE jack port of the SKY500N, it fails to turn the TV off after a connection has been reported. The ANYNET port uses an RS232 port called Phone Jack, and the SERVICE jack port also uses the RS232 port. However, you must not connect the SERVICE port and the ANYNET port. Check if the port is the ANYNET port or the SERVICE port before connecting the port. Even if the TV cannot be turned on after connecting, the TV will turn on if you disconnect the connection.
Length of DVI Cable / PC RGB Cable	- A too long DVI cable may cause a malfunction or degradation of the visual quality due to an attenuation of the signal. There is no recommendation for the cable length at present. In general, although a cable length of up to 5 meters should work, please check if video is properly displayed on the screen after connecting. If you think the length of the cable is longer than for normal use, check the visual quality of the video on the screen and shorten the length, if necessary. - This also applies to the PC RGB (D-Sub) cable. When the length of the cable is longer than for normal use, video may not be displayed on the screen. In this case, shorten the cable length.
When a digitally distributed TV user receives HD-rated broadcasts:	The digital distributed TV (Ready Technique) can render HD sources as HD-rated. However, you need to install a set-top box for this purpose. The digital TV alone cannot render HD broadcasting as HD-rated. Install the formal set-top box for HD broadcasts.
When a digital distributed TV user selects normal size (4:3) to receive SD-rated digita broadcasts:	The digitally distributed TV (Ready Technique) renders any broadcasting service as SD-rated. However, when connected to a set-top box, the digital TV renders HD broadcasts as HD-rated and renders SD as SD-rated. The screen size is scaled to 4:3.
When a digitally built-in TV user receives SD (air) broadcasting:	The digitally integrated TV ("built-in" type) renders SD broadcasting as SD-rated. This can be understood easily. Even a high-resolution TV cannot improve a low resolution picture into high quality. In contrast, an SD-rated TV cannot represent HD broadcasting as HD because the resolution of the TV is lower than the original.
When selecting a picture size of 4:3 in connection with a computer or a multimedia device:	The representation capability of SD or HD-rated depend entirely on the TV set. The HD TV can render HD broadcasting as HD-rated only when it receives HD sources. In the meantime, the HD TV renders SD as SD-rated when it receives SD sources. The picture size has nothing to do with the resolution; TV models like SVP-XXL3HD or SVP-XXL6HD have a size adjustment feature to 16:9, 4:3, Panorama, Zoom1, Zoom2 and Auto Wide. This is about the aspect ratio of the top and bottom boundaries to the overall screen and users can select their preference.

■ SD/HD broadcasts and the TV's display capability are related

1. A digital broadcast should be transmitted in wide screen (an aspect ratio of 16:9) HD. If the broadcasting station converts a conventional program created in normal screen (aspect ratio of 4:3) into a digital signal and broadcasts the signal, the left and right of the picture will not be displayed.
   This symptom also appears in other manufacturer's TV's. The three appliance companies are trying to resolve the problem through the Ministry of Information and Communication.
   * When watching an SD (normal) broadcast through a Digital (Wide) TV (480P normal broadcast)
   * When watching an SD (normal) broadcast through a Digital Ready (Wide) TV (Using a set-top-box)
   * When watching an analog (normal) broadcast through a wide TV
     (When watching a broadcast after changing the aspect ratio of the TV from 16:9 (wide screen) to 4:3)

2. When watching a DVD title or video tape in wide screen (21:9) through a wide (16:9) TV, watching video from a computer or game console by selecting the aspect ratio to 4:3, or watching video from a DVD, VCR, computer or game console through a wide TV by selecting the aspect ratio to normal (4:3) or wide (21:9), the left and right, or top and bottom of the picture will not be displayed.
   This symptom appears in other manufacturer's TV's. The three appliance companies are trying to resolve the problem through the Ministry of Information and Communication.

■ Changing the Order of the Picture Size for 16:9 Display Devices



■ Changing the Order of the Picture Size for DTV 1080i/720p Sources

■ Restrictions

1. When you want to change the picture size in PIP 'ON', you must turn the PIP off before changing the size.
   However, you can change the main picture size even in PIP ON for products with no restrictions.

2. When the picture size is not Normal (4:3 for 4:3 display devices, 16:9 for 16:9 display devices) and you turn PIP on, the picture size is changed to Normal.
   However, you can turn PIP on without changing the picture size for products with no restrictions.

3. In the OSD notation for the picture size, 16:9 is represented as "Wide" instead of "16:9" for devices other than with 16:9 dis plays.
   Ex: For LCD 15:9 devices, "Wide" is displayed on the OSD instead of "16:9".

4. The picture size can be changed even in the blue screen.
   However, the picture size should be controlled by the product specifications if the change is impossible due to hardware restrictions.

14-2 Technical Terms

Digital Broadcast
Digital Broadcast is a television broadcasting signal digitized and transmitted according to the United States' terrestrial digital broadcast standard, or ATSC.

Mono
A type of audio interface that transmits audio signals through a single channel.
Through a mono interface, it is hard to experience stereophonic sound and sound is played only by one speaker.

Reception Sensitivity Amplification
A signal amplification technique that amplifies weak broadcasting signals by applying satellite technology to provide a better visual quality even for users in regions where only weak broadcasting signals are available.

Stereo
A type of audio interface that transmits audio signals through 2 channels.
Stereo transmits audio signals for the right and left channels so that you can experience stereophonic sound, and the sound is played with 2 speakers.

Analog Broadcast
Analog Broadcast is a television broadcasting signal transmitted according to the NTSC standard.

ANTENNA IN Port
A port to connect the TV aerial using a coaxial cable. It is generally used to watch public broadcast programs.

English Caption
A function that shows English caption or text information included in the broadcasting signal or video tape. You can use this function to study English by watching AFKN or CC marked video tapes.

Video/Audio Ports
You may experience poor visual and audio quality when watching a video tape on channel 3 or 4 through the antenna cable. You can experience better visual and audio quality connecting the TV and VCR through the Video/Audio ports. The video port is distinguished by the color yellow, and the audio ports are distinguished by the white (left) and red colors (right).

External Input
External Input is connecting video devices such as a VCR, camcorder, DTV receiver, DVD, etc. as a video source.

Satellite Broadcast
Satellite Broadcast transmits programs via satellite so that the broadcast is viable in all areas at a high visual and sound quality. It provides approximately 100 channels including public broadcast channels. To view satellite broadcast, you have to install an additional receiver.

Wired Broadcast
Satellite Broadcast refers to movie, entertainment and educational programs transmitted by the broadcasting station in a hotel or school.

Audio Multimix
Audio Multimix provides 2 languages for audio when broadcasting a foreign movie, drama, news, etc. You can select and listen to one of the supported languages or you can select and listen to both languages simultaneously.

Component Port (Green, Blue, Red)
The Component Port separately transmits the luminance signal and provides the best quality of all video connection types.

Cable Broadcast
Cable Broadcast transmits programs via cable instead of radio wave. To view a cable broadcast, you need to subscribe to your local cable broadcast service provider and install an additional receiver.

Tuner
A device that enables selecting a specific frequency for a channel on a TV or radio.

Anynet
Anynet is an AV network system that enables the easy-to-use AV interface for users by controlling connected AV devices through the Anynet menu when AV devices of Samsung Electronics are connected.

DVD (Digital Versatile Disc)
DVD is a large capacity media that can save multimedia content such as video, game, audio applications, etc. using MPEG-2 video compression technology on a CD-sized disc.

S-VIDEO IN Port
This is called super video. S-Video is a type of video signal which has the video luminance and color signals separated in order to provide a better visual quality.

VHF/UHF
VHF refers to TV channels 2 to 13, and UHF refers to TV channels 14 to 69.

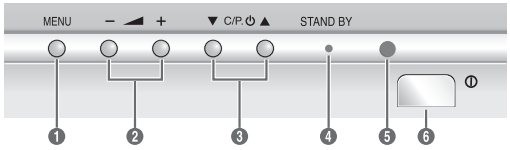
MEMO

11. Operation Instruction & Installation

11-1 Product Features and Functions

11-1-1 Front

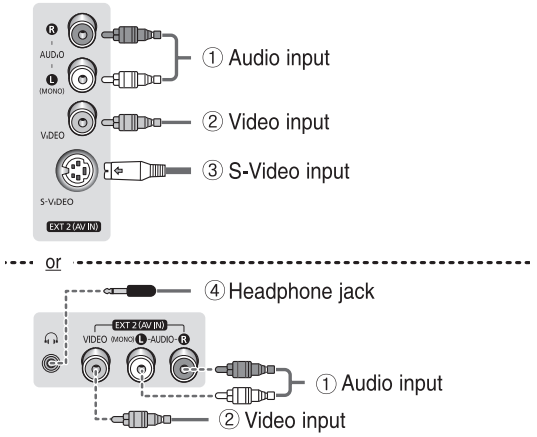
Front (or Side) Panel



① On-screen menu display
② Volume adjustment
③ Channel selection
④ Standby indicator
⑤ Remote control sensor
⑥ Power on/off

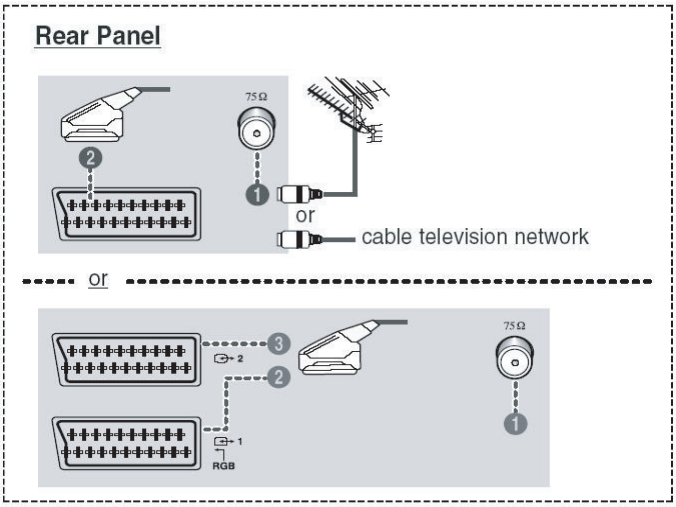
11-1-2 Side

Front (or Side) Panel

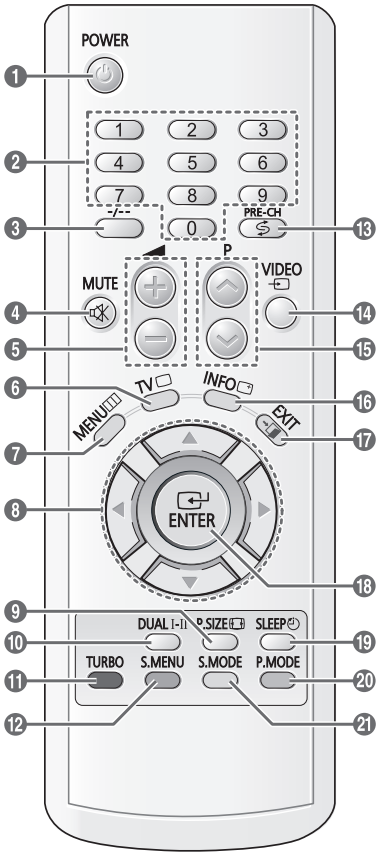


11-1-3 Rear

Rear Panel



11-1-4 Remote Control



❶ POWER
Used to switch the TV on and off.

❷ Numeric buttons
Used to select channels directly.

❸ -/--
Used to select a channel numbered ten or over. Press this button, then "--" symbol is displayed. Enter the two-digit channel number.

❹ MUTE
Used to switch the sound off temporarily. To turn the sound back on, press the MUTE, ⊕, or ⊖ button.

❺ ◢ ⊕ / ⊖
Used to increase or decrease the volume.

❻ TV
Used to return to the TV mode when it is in external input mode.

❼ MENU
Used to display the on-screen menu or return to the previous menu.

❽ ▲ / ▼ / ◀ / ▶
Used to control the cursor in the menu.

❾ P.SIZE
Used to change the screen size.

❿ DUAL I-II
Used to select the sound mode.

⓫ TURBO
Used to select the turbo sound option.

⓬ S.MENU
Used to display the sound menu.

⓭ PRE-CH
Used to switch repeatedly between the last two channels displayed.

⓮ VIDEO
Used to display all of the available video sources.

⓯ P ⊕ / ⊖
Used to display the next or previous stored channel.

⓰ INFO
Used to view the channel information and setting status you selected.

⓱ EXIT
Used to exit from any display or return to normal viewing.

⓲ ENTER
While using the on-screen menus, press the ENTER button to activate (or change) a particular item.

⓳ SLEEP
Used to select a preset time interval for automatic shut off.

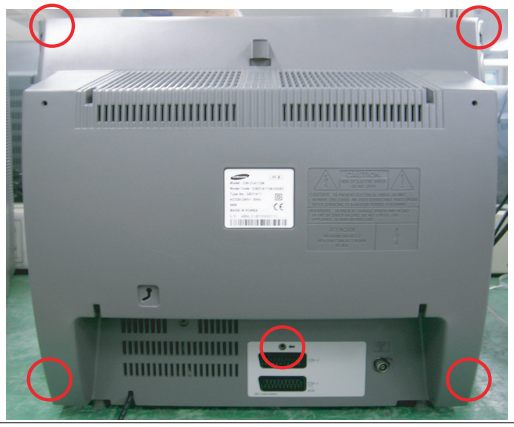
⓴ P.MODE
Used to select the picture effect.

㉑ S.MODE
Used to select the sound effect.

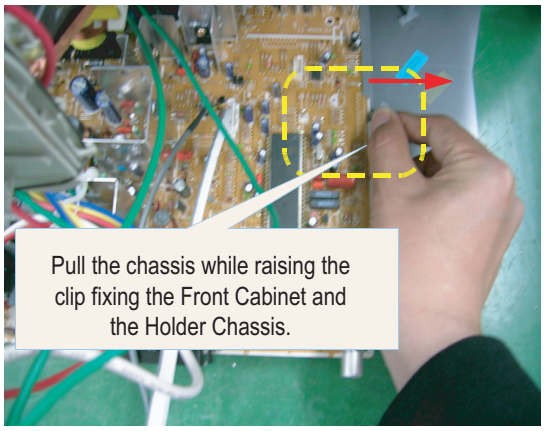
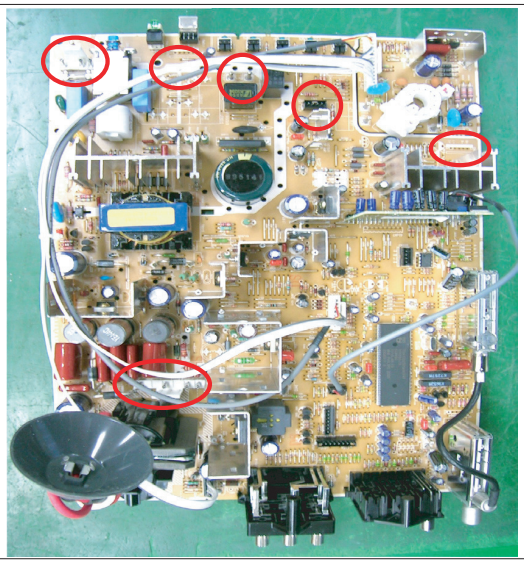
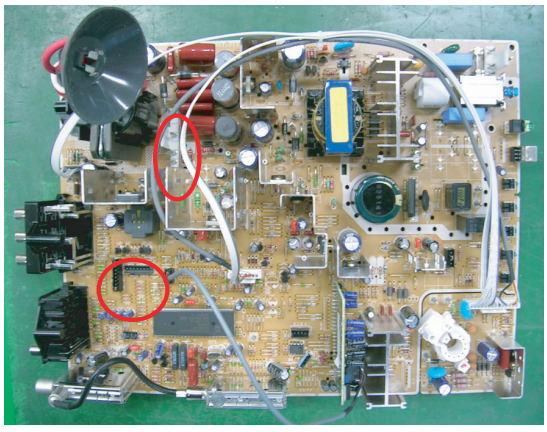
12. Disassembly & Reassembly

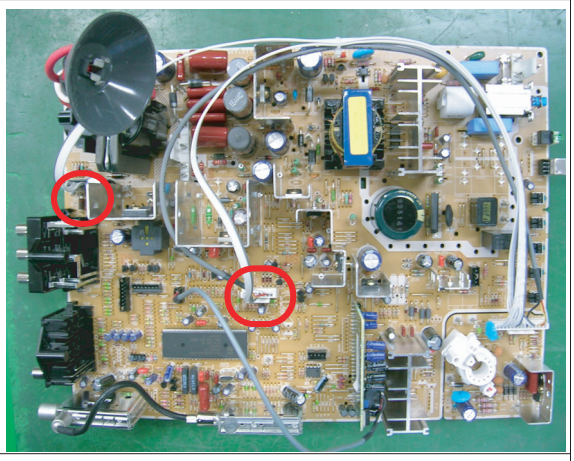
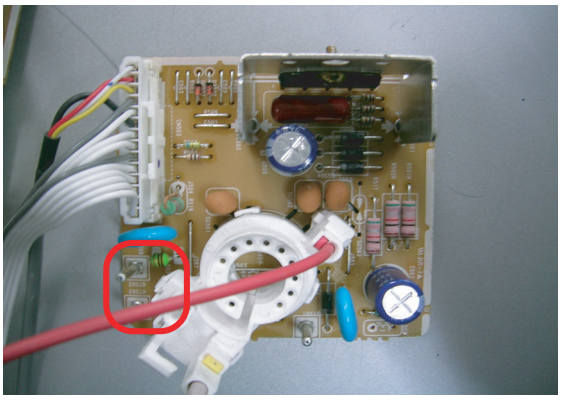
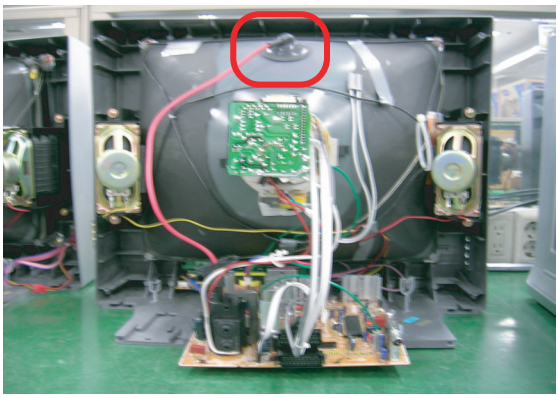
12-1 Overhaul Disassembly & Reassembly

12-1-1 Disassembling the Cabinet

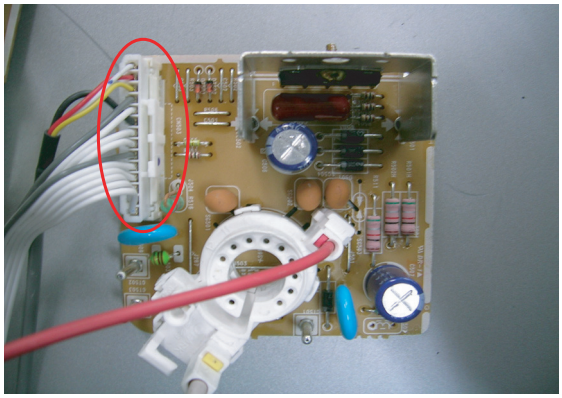
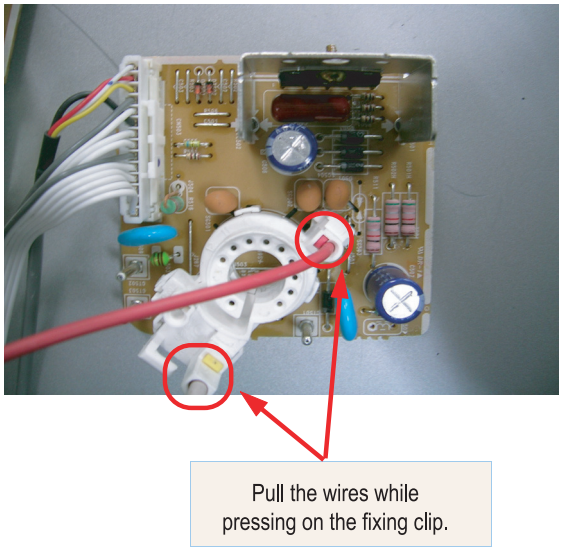
Part Name	Description	Description Photo
Back Cover	① Remove the 4 screws fixing the Back Cover. : SWRCH18A,M4,L20,RH,+,2S,-,Z ②Remove the 1 screws fixing the Main and T/Board. : RH,+,B,M4,L15,ZPC(BLK) ③ Tap the upper part of the Back Cover 2 or 3 times and pull the Back Cover to separate it from the unit. ⚠Notice: Disassemble the product after disconnecting the power cord and discharge the unit to prevent an electric shock and damage to the product due to static electricity.	

12-1-2 Disassembling the CRT and Chassis

Part Name	Description	Description Photo
Chassis Holder	① Separate the Ass'y Holder chassis from the Front Cabinet. ② Pull the Chassis Holder lifting the fixing clip up. ⚠Notice: Pulling the Chassis Holder by force may damage the clip or the connector. Pull the Chassis Holder just until the clip comes off the hole.	
	① Separate the Speakers, the Speaker Wire, the D-Coil Master Wire, and the Remote Control Sensor Cable from the Front Cabinet and the System Board. ② Separate the wire from the Wire pressing the at. ⚠Notice: Since there is a clip to connect the Connector Header in the Wire Connector, pulling it by force may damage the clip or the connector. Press the clip down completely and pull the connector.	
	① Separate theAV and Main Board from the Front Cabinet and AV Wire, GT-Pin Wire. ② To separate the Wire, Fixing clip and pressing the Wire.	

Part Name	Description	Description Photo
Chassis Holder	① Separate the 7P, 8P Wire connecting the DY Wire and the CRT PCB. ② To separate the Wire, Fixing clip and pressing the Wire.	
	① Remove the CRT. ②Separate the TBC Wire,GND,VM cables from the CRT Ass'y. (GND, VM, Tilt Model by option) ⚠Notice: : When take off VM,Tilt cable from CRT PCB, don't touch PIN in CRT electric gun.	
	① Separate the cables connecting the FBT and the CRT. ⚠Notice: Since there may be a remaining high-voltage current within the CRT, take care not to touch the CRT hole with metal or a part of yourself when separating the cables.	

12-1-3 Disassembling the CRT Ass'y

Part Name	Description	Description Photo
CRT Ass'y	① Separate the cables from the Main Board and CRT Ass'y.	
	① Separate the wires from the FBT of the Main Board and the CRT Ass'y. ② To separate the thick white and white wires, up the yellow soket while the push-type clip at the connector. ③ To separate the thick red and red wires, up the red soket while the push-type clip at the connector. ⚠ Notice : Take care when separating the wires because pulling the wires by force may damage the socket. In addition, separate the wires on a flat and clean surface so as to prevent scratching of the material and the PCB.	 Pull the wires while pressing on the fixing clip.

2. Product Specification

2-1 Product Features

Block	Specfication	Core Parts	Remark
CRT	21" FLAT AK CRT 25" FLAT AK (MST) CRT 29" FLAT GREEN CRT(H/V:26.5kV) 29" FLAT MST CRT (H/V:29.0kV) 28" WIDE MST CRT 32" WIDE MST CRT	AK CRT MST CRT GREEN CRT	
RF Part	LNA & 2TUNER PIP F/S TUNER	TDQ-6F/125S,NON-LNA TDQ-6L/125S,LNA TDQ-6L/125S-A2,LNA VFT-6B/234S	
Power	WORLD WIDE INPUT VOLTAGE RANGE STD-BY : 5W UNDER	STR-W6750F	
Video	- DNIe jr. - MULTI SYSTEM(NT/PAL/SECAM) - 4H Comb Filter	TDA12025PQ/N1F80 TDA12015PQ/N1F80 TDA12025PQ/N1F90	
Audio	- Output : 5W/10W/15W X2 - Function : NICAM/A2 STEREO, PSEUDO STEREO, V-DOLBY TURBO PLUS	TDA12025PQ/N1F80 TDA12015PQ/N1F80 TDA12025PQ/N1F90 TDA7297SA	
Cabinet	21"/25"/28"/29"/32" All CABINET		
Other	- BASIC MODEL : CW21A113N / CS21T20ZQ - UOC3 with a built-in MSP - TURBO → TURBO PLUS		

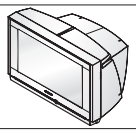
■ Core Parts Functions
- TDA12021PQ : Video/Sound Processing ¹× MICOM
- STR-W6750F : SMPS Power STR
- TDA7297SA(or 7266) : 5W ~ 15W Sound Output BTL AMP
- 24C16 : 16K EEPROM
- LA7845 : Vertical Deflection AMP
- C5936 : H-OUT S/W TR
- TDQ-6F(or 6L) : F/S PAL Tuner(LNA Option)
- TDA6109JF : R/G/B Drive AMP IC
- Flyback Trans : FOK14B001(11P,27KV)

2-2 Key Features

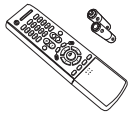
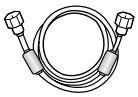
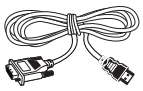
Country	EU	CIS	ASIA
COLOR demodulation	PAL-BG / DK/ I NT4.43, SECAM-L / L'	PAL-BG / DK / I NTSC-M (CS SYSTEM)	PAL-BG / DK / I NTSC-M (CS SYSTEM)
Sound receving way	QSS (Quasi Split)	QSS (Quasi Split)	QSS (Quasi Split)
Sound demodulation	INTER CARRIER (Virtual Dolby / Nicam / A2 Stereo)		
Antemma	75ohm Din-Jack		
Channel search	F/S		
Channel numbers	AIR (100Ch)		
Input voltage	AC 220V ~ 240V	AC 160V - 300V	AC 220V ~ 240V
Power system	STR-W6750F		
Power insulation	SMPS / COLD		
receving(P/G) CH	VHF LOW : 2 ~ 4 VHF HIGH : 5 ~ 12 UHF : 21 ~ 69 CATV : S1 ~ 41,X,Y,Z,Z+1,Z+2		
Character	TTX Melody on/off Turbo Sound Auto Volume Pre-Ch' LNA+ (Option) Led : Green	TTX, LNA+ Melody on/off Turbo Sound Auto Volume Pre-Ch' LNA+ (Option) Led : Green	TTX Melody on/off Turbo Sound Auto Volume Pre-Ch' LNA+ (Option) Led : Green

■ Feature
- AKB(Auto Kinetic Bais)
- Comb Filter : 4H Comb Filter
- Picture Size : 4:3/Zoom (Auto Wide/16:9/Panorama/Zoom/4:3)
- Virtual Dolby / NICAM / STEREO / Line-STEREO
- Auto Stereo,Sound Equalizer,Auto Mute,Auto Volume Limit,PSEUDO STEREO,TURBO PLUS
- Composite (RCA A/V,DVD),S-Video(Y/C)
- Rear : 42P Scart Input/Output (Scart1 R/G/B Input)
- Front or Side A/V Input (Side A/V Preferability), S-VHS

2-3 Specifications Analysis

Model		CW21A113N	CW-29M064N
Chassis		KS7A	S16A
Design			
Basic	Product Type	FLAT CRT	FLAT CRT
	Digital Display		
	Screen Size	21	29
	Aspect Ratio	4:3	4:3
System	Broadcasting System	PAL/SECAM	PAL/SECAM
	Tuner	Programmable F/S	Programmable F/S
	CH Memory	100CH	100CH
Power	Supply	230V	160-300V
	Stand-by	3W	5W
	Picture ON	Master S/W	Master S/W
Picture	4H Comb-Filter	O	O
	SCAN	50HZ	50HZ
	Sharpness	O	O
	Still picture	X	X
	CTI	O	X
	VM	X	X
	AKB	O	O
	P.STD	O	O
	PIP	X	X
	Stock ticker	X	X
	Digital NR	O	O
	Color Tone(W/B)	O	O
	Black Level Expantion	O	O
	Screen Mode	5 Mode	5 Mode
	3:2 / 2:2 Pull-Down	Option	Option
Sound	SPK System A11	Semi Dome/Direct	Direct
	Sound Output Power(Max)	5W + 5W	10W + 10W
	BBE	X	X
	MDB	X	X
	Virtual Dolby	O	X
	MSE	X	X
	Melody	O	O
	Turbo Sound	O	O
	A2 Stereo	A2 or Nicam	A2 or Nicam
	Auto Stereo	O	O
	AVL	O	O
	Equalizer	O	O
Jack	Front/Side AV Jack	O	O
	PC Input(VGA)	X	X
	Scart Jack	2Scart	2Scart
	Back A/V Monitor Out	O	O
	S-VHS Jack(Front only)	O	O
	Head/Earphone Jack	O	X
	Common Interface	O	O
	Service Port	X	X
Accessory	I/B	O	O
	Normal Remocon(TM76)	O	O
	Battery	O	O
	Matching Trans	O	X
	Rod ANT	O	X

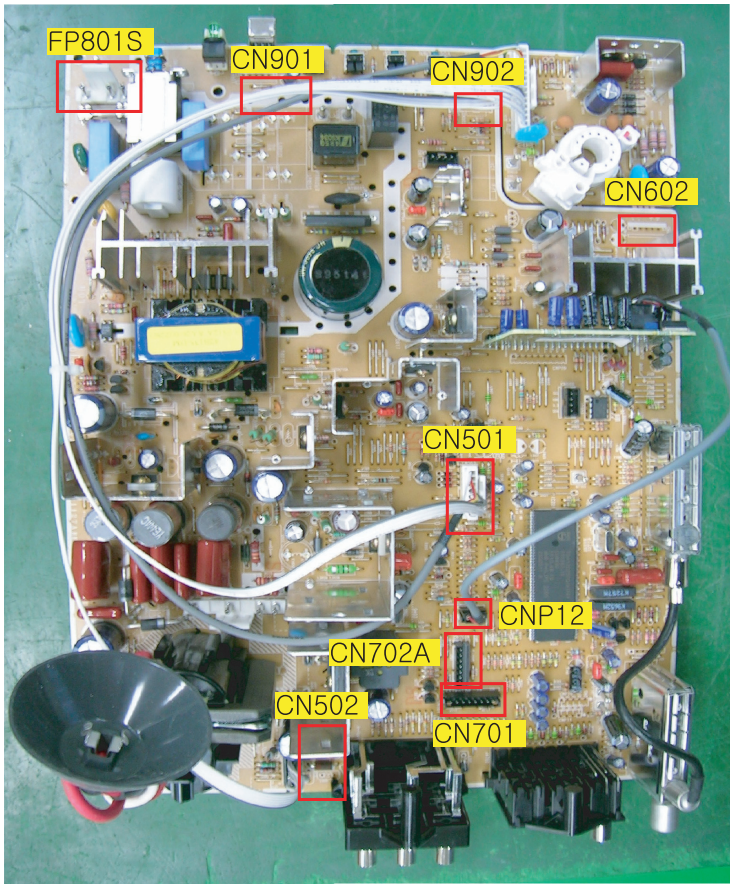
2-4 Accessories

Accessories		Item	Item code	Remark
Supplied Accessories		Remote Control / Alkaline Battery (1.5V AAA)2EA	AA59-00312J/ 4301-000121	Samsung Service center
		User Manual	AA68-03621A	
		Warranty Card	AA68-03242B	
Accessories that can be purchased additionally		Coaxial cable	-	Internal shopping mall
		HDMI/DVI cable	-	
		HDMI Cable	-	
		Video Cable / Audio Cable	-	
		S-Video Cable		
		Component Cable		
		Optical Cable		

9. PCB Diagram

9-1 Main Board

9-1-1 Assy Main Board



■The Board that Controls Various Signals & Power for Product Operations

9-1-2 Names & Roles of Key Parts

* FP801S : A 3 pin port connected to the MASTER ASS'Y, which handles MASTER POWER ON/OFF.
* CN902 : A 4 pin port connected to the CONTROL ASSY, which delivers the necessary signal to KEY-IN1, KEY-IN2 CONTROL.
* CN901 : A 5 pin port connected to the CONTROL ASSY, which delivers the necessary signal to the remote control and the LED CONTROL.
* CN602 : A 5 pin port connected to the SPEAKER port, which delivers the signal from the AMP to the speakers.
* CN502 : A 7 pin port connected to the CRT ASS'Y. Through this port, the power from the DEFLECTION BLOCK is supplied to drive the CRT and AMP.
* CN701 : An 8 pin port connected to the AV ASS'y, which receives AV2 external input.
* CN702A : An 7pin port connected to the AV ASS'y, which receives S-VIDEO IN/PUT connected.
* CNV501 : A 8pin port connected to the CRT ASS'y which outputs the R/G/B signal to the CRT ASS'Y for display. In addition, this port outputs the necessary TILT, VM, and Power signals to the CRT DRIVE.
* CNP12 : An 3 pin port connected to the PIP Module, which receives PIP-CVBS input.

9-1-3 Main Board Connector Pin

CN901
Connected to the Control Ass'y

PIN No.	Pin Name
1	STD-LED
2	TIME-LED
3	GND
4	VCC-5V(A)
5	IR

CN902
Connected to the Control Ass'y

PIN No.	Pin Name
1	KEY-IN2
2	KEY-IN1
3	GND
4	KEY-IN3

CN602
Connected to the Speaker

PIN No.	Pin Name
1	R+
2	R-
3	GND
4	L+
5	L-

CN502
Connected to the CRT Ass'y

PIN No.	Pin Name
1	-16.5V
2	NC
3	+16.5V
4	GND
5	HEATER
6	NC
7	B+200V

CN501
Connected to the CRT Ass'y

PIN No.	Pin Name
1	B-OUT
2	G-OUT
3	R-OUT
4	GND
5	SENSE
6	GND
7	VM
8	GND

CNV701
Connected to the AV Ass'y

PIN No.	Pin Name
1	V-OUT
2	GND
3	V-IN
4	GND
5	L-OUT
6	R-OUT
7	L-IN
8	R-IN

CNV702
Connected to the AV Ass'y

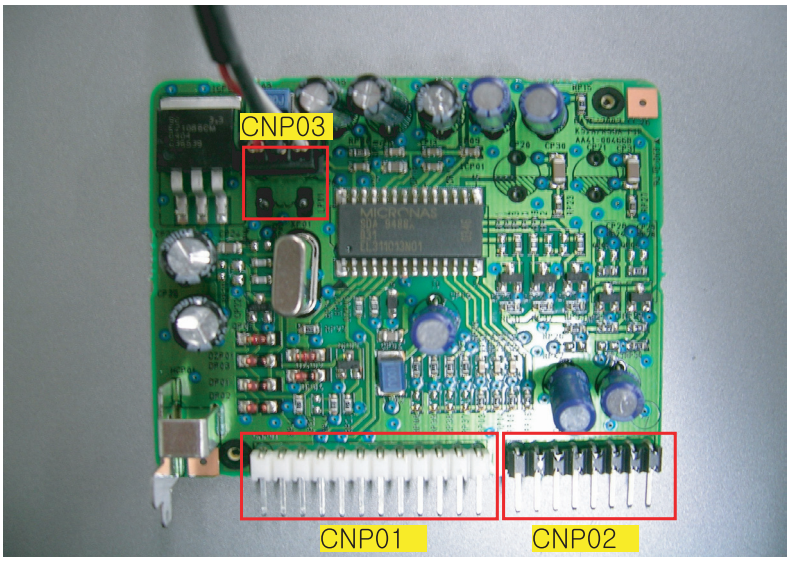
PIN No.	Pin Name
1	C-IN
2	GND
3	Y-IN
4	GND
5	C-OUT
6	GND
7	Y-OUT

CNP12
Connected to the PIP Module

PIN No.	Pin Name
1	GND
2	PIP-CVBS
3	GND

9-2 PIP Module

9-2-1 PIP Module



9-2-2 Names & Roles of Key Parts

* CNP01 : A 12pin port inserted into the MAIN ASS'y, which connects various signal control ports necessary for PIP signal processing and product operation.
* CNP02 : A 8pin port inserted into the MAIN ASS'y, which connects various signal control ports necessary for PIP signal processing and product operation.
* CNP03 : A 8pin port inserted into the MAIN ASS'y, signals to the PIP-CVBS.

9-2-3 PIP Module Connector Pin

CNP01
Connected to the Main Ass'y

PIN No.	Pin NAME
1	B+8V
2	B+5V
3	GND
4	SCL
5	SDA
6	GND
7	H-SYNC
8	V-SYNC
9	PIP-F/B
10	PIP-B
11	PIP-G
12	PIP-R

CNP02
Connected to the Main Ass'y

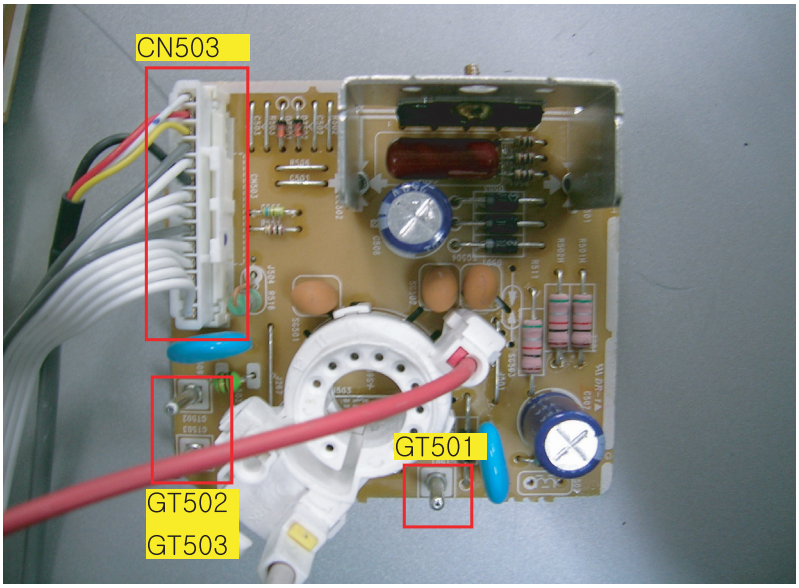
PIN No.	Pin NAME
1	OSD-R
2	OSD-G
3	OSD-B
4	OSD-F/B
5	SUb-CVBS
6	GND
7	PIP-CVBS
8	C-IN

CNP03
Connected to the Main Ass'y

PIN No.	Pin NAME
1	GND
2	PIP-CVBS
3	GND

9-3 CRT Board

9-3-1 CRT Board



■ Through this port, the power from the DEFLECTION BLOCK & the R/G/B output signal from the VCTi Module are supplied to drive the CRT and AMP.

9-3-2 Names & Roles of Key Parts

* GT502 & GT503 : The TBC-WIRE connection port. This port plays the role of the CRT GROUND.
* CN503 : The R/G/B output signal from the VCTi Module & the power, which is required to drive the CRT and the AMP, from the DEFLECTION BLOCK is connected to this port.

9-3-3 CRT Board Connector Pin

CN503
Connects the R/G/B signal from the VCTi Module.

PIN No.	Pin NAME
1	B-OUT
2	G-OUT
3	R-OUT
4	GND
5	SENSE
6	GND
7	NC
8	NC
9	NC
10	NC
11	GND
12	HEATER
13	NC
14	B+200V

MEMO

1. Precaution

To avoid possible damages or electric shocks or exposure to radiation, follow the instructions below with regard to safety, installation, service and ESD.

1-1 Safety Precautions

1. Make sure all protective devices are properly installed including non-metallic handles and compartment covers when installing or re-installing the chassis or chassis assemblies.

2. Make sure that no gaps exist between the cabinets for children to insert their fingers in to prevent children from receiving electric shocks. Gaps mentioned above include ventilation holes of a too great magnitude between the vaccum tube and the cabinet mask, and the improper installation of the rear cabinet.

   Errors may occur when the resistance is below 1.0 MΩ or over 5.2 MΩ.
   In these cases, make sure that the device is repaired before sending it back to the customer.

3. Check for Electricity Leakage (Figure 1-1)
   Warning: Do not use an insulated transformer for checking the leakage. Use only those current leakage testers or mirroring systems that comply with ANSIC 101.1 and the Underwriter Laboratory's specifications (UL1410, 59.7).

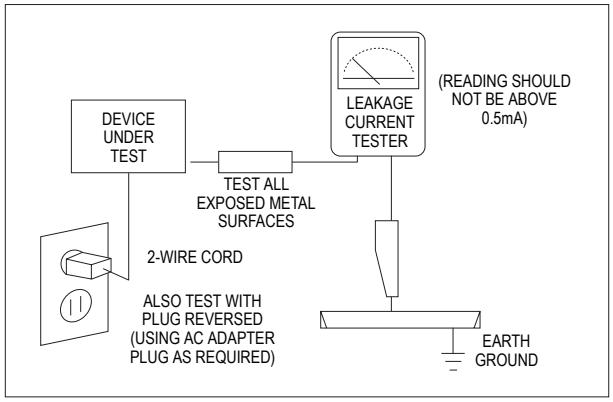

LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5mA)
DEVICE UNDER TEST
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

Fig. 1-1 AC Leakage Test

4. A high voltage is maintained within the specified limits using safety parts, calibration and tolerances. When voltage exceeds the specified limits, check each special part.

5. Warning for Engineering Changes:
   Never make any changes or additions to the circuit design or the internal part for this product.
   Ex: Do not add any audio or video accessory connectors. This might cause physical damage. Furthermore, any changes or additions to the original design/engineering will invalidate the warranty.

6. Warning - Hot Chassis:
   Some TV chassis are directly connected to one end of the AC power cord for electrical reasons.
   Without insulated transformers, the product can only be repaired safely when the chassis is connected to the earthed end of the AC power source.

   To make sure the AC power cord is properly connected, follow the instructions below. Use the voltmeter to measure the voltage between the chassis and the earthed ground. If the measurement is over 1.0V, unplug the AC power cord and change the polarity before re-inserting it. Measure the voltage between the chassis and the ground again.

7. Some TV chassis are shipped with an additional secondary grounding system. The secondary system is adjacent to the AC power line. These two grounding systems are separated in the circuit using an unbreakable/unchangeable insulation material.

8. When any parts, material or wiring appear overheated or damaged, replace them with new regular ones immediately. When any damage or overheating is detected, correct this immediately and make a regular check of possible errors.

9. Check for the original shape of the lead, especially that of the antenna wiring, any sharp edges, the AC power and the high voltage power. Carefully check if the wiring is too tight, incorrectly placed or loose. Never change the space between the part and the printed circuit board. Check the AC power cord for possible damages. Keep the part or the lead away from any heat-emitting materials.

10. Safety Indication:
    Some electrical circuits or device related materials require special attention to their safety features, which cannot be viewed by the naked eye. If an original part is replaced with another irregular one, the safety or protective features will be lost even if the new one has a higher voltage or more watts.

    Critical safety parts should be bracketed with ( ). Use only regular parts for replacements (in particular, flame resistance and dielectric strength specifications). Irregular parts or materials may cause electric shock or fire.

1-2 Servicing Precautions

Warning 1: First carefully read the "Safety Instruction" in this service manual.
When there is a conflict between the service and the safety instructions, follow the safety instruction at all times.

Warning 2: Any electrolytic capacitor with the wrong polarity will explode.

1. The service instructions are printed on the cabinet, and should be followed by any service personnel.

2. Make sure to unplug the AC power cord from the power source before starting any repairs.
   (a) Remove or re-install parts or assemblies.
   (b) Disconnect the electric plug or connector, if any.
   (c) Connect the test part in parallel with the electrolytic capacitor.

3. Some parts are placed at a higher position than the printed board. Insulated tubes or tapes are used for this purpose. The internal wiring is clamped using buckles to avoid contact with heat emitting parts. These parts are installed back to their original position.

4. After the repair, make sure to check if the screws, parts or cables are properly installed. Make sure no damage is caused to the repaired part and its surroundings.

5. Check for insulation between the blade of the AC plug and that of any conductive materials (i.e. the metal panel, input terminal, earphone jack, etc).

6. Insulation Check Process: Unplug the power cord from the AC source and turn the switch on. Connect the insulating resistance meter (500v) to the AC plug blade.

   The insulating resistance between the blade of the AC plug and that of the conductive material should be more than 1 MΩ.

7. Any B+ interlock should not be damaged.
   If the metal heat sink is not properly installed, no connection to the AC power should be made.

8. Make sure the grounding lead of the tester is connected to the chassis ground before connecting to the positive lead. The ground lead of the tester should be removed last.

9. Beware of risks of any current leakage coming into contact with the high-capacity capacitor.

10. The sharp edges of the metal material may cause physical damage, so ensure wearing protective gloves during the repair.

1-3 Static Electricity Precautions

1. Some semi-conductive ("solid state") devices are vulnerable to static electricity. These devices are known as ESD. ESD includes the integrated circuit and the field effect transistor. To avoid any materials damage from electrostatic shock, follow the instructions described below.

2. Remove any static electricity from your body by connecting the earth ground before handling any semi-conductive parts or ass'ys. Alternatively, wear a dischargeable wrist-belt.
   (Make sure to remove any static electricity before connecting the power source - this is a safety instruction for avoiding electric shock)

3. Remove the ESD ass'y and place it on a conductive surface such as aluminum foil to prevent accumulating static electricity.

4. Do not use any Freon-based chemicals.
   Such chemicals will generate static electricity that causes damage to the ESD.

5. Use only grounded-tip irons for soldering purposes.

6. Use only anti-static solder removal devices.
   Most solder removal devices do not support an anti-static feature. A solder removal device without an anti-static feature can store enough static electricity to cause damage to the ESD.

7. Do not remove the ESD from the protective box until the replacement is ready. Most ESD replacements are covered with lead, which will cause a short to the entire unit due to the conductive foam, aluminum foil or other conductive materials.

8. Remove the protective material from the ESD replacement lead immediately after connecting it to the chassis or circuit ass'y.

9. Take extreme caution in handling any uncovered ESD replacements. Actions such as brushing clothes or lifting your leg from the carpet floor can generate enough static electricity to damage the ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.

2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.

3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.

4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.

5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.

6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the high-voltage cable or the antenna falling over may cause fire or electric shock.

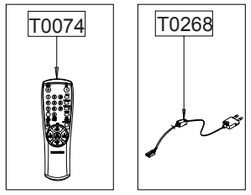
7. Check the basics of the screen test.
   - Image position/size, Tilt adjustment

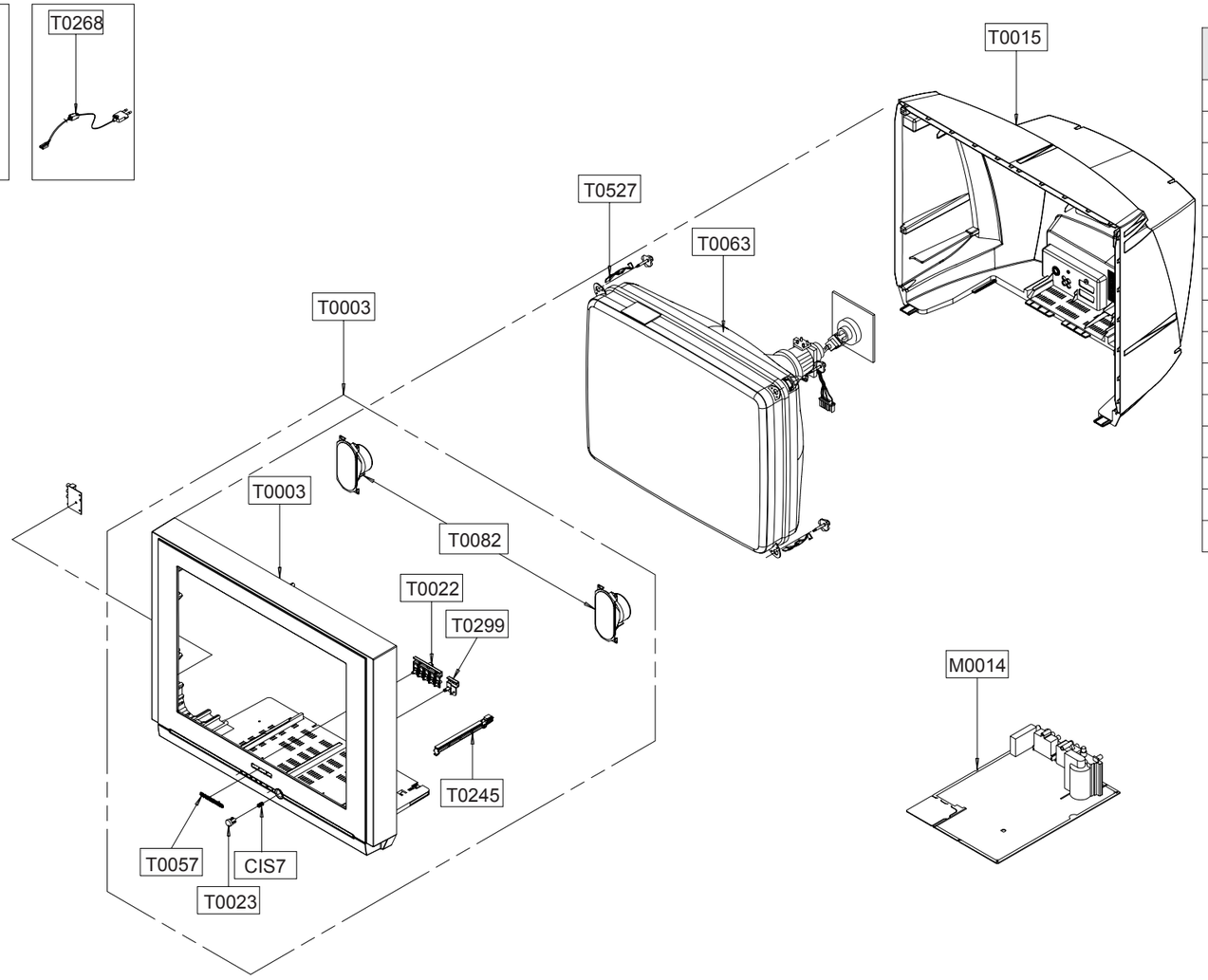
MEMO

4. Exploded View & Part List

4-1 CW29M064N2XXEC

You can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

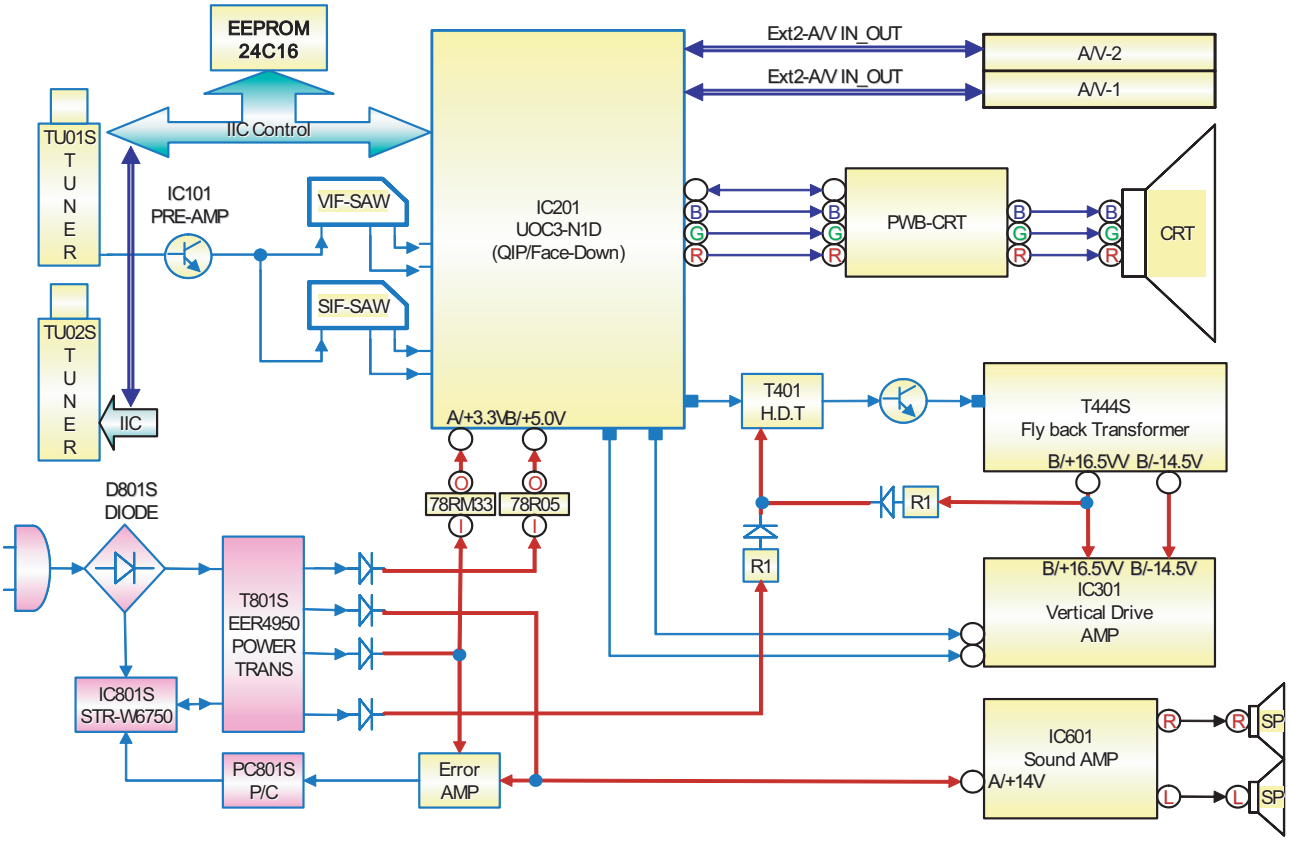




Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
CIS7	AA61-60003J	SPRING ETC-CS	-,SUS304,-,-,OD6,N7,OD6,-,	1	S.N.A	
M0014	AA94-15536A	ASSY PCB MAIN	CW29M164N2XXEC,S16A,AK,ELD	1		
T0003	AA64-04007A	CABINET FRONT	29M06,HIPS,HB,SV012P,SEH,K	1	S.N.A	
T0003	AA96-02034A	ASSY C P-FRONT	29M06,HIPS,HB,KS3A,SV	1		
T0015	AA64-04015A	CABINET BACK	29M06,HIPS,HB	1		
T0022	AA64-04011A	KNOB CONTROL	M06,HIPS,HB,SV012P,ALL,SEH	1	S.N.A	
T0023	AA64-04012A	KNOB POWER	M06,HIPS,HB,SV012P,ALL,SEH	1	S.N.A	
T0057	AA64-70117B	BADGE-BRAND	,AL,T1.5,10.6,L65,BLK,SILVER	1		
T0063	AA03-00420A	CRT COLOR	A68QFN793X001,+380,1.09,20.0,1	1		
T0074	AA59-00312J	REMOCON	S16A,TM75,TTX,47,G6148,EX,PAL,	1		
T0082	3001-001092	SPEAKER	10W,8OHM,87DB,150HZ	2		
T0245	HA61-00711C	HOLDER-PCB	29K8,HIPS,HB,GRY	1	S.N.A	
T0268	AA39-10001G	CBF-POWER CORD	-,KKP-419C,KLCE-2F,2.286m	1		
T0299	AA64-04013A	WINDOW-RMC,LED	M06,ACRYL,HB,CLEAR,SEH	1	S.N.A	
T0527	AA61-01373C	HOLDER-D COIL	NYLON,W31MM,WHT,SEH	4	S.N.A	

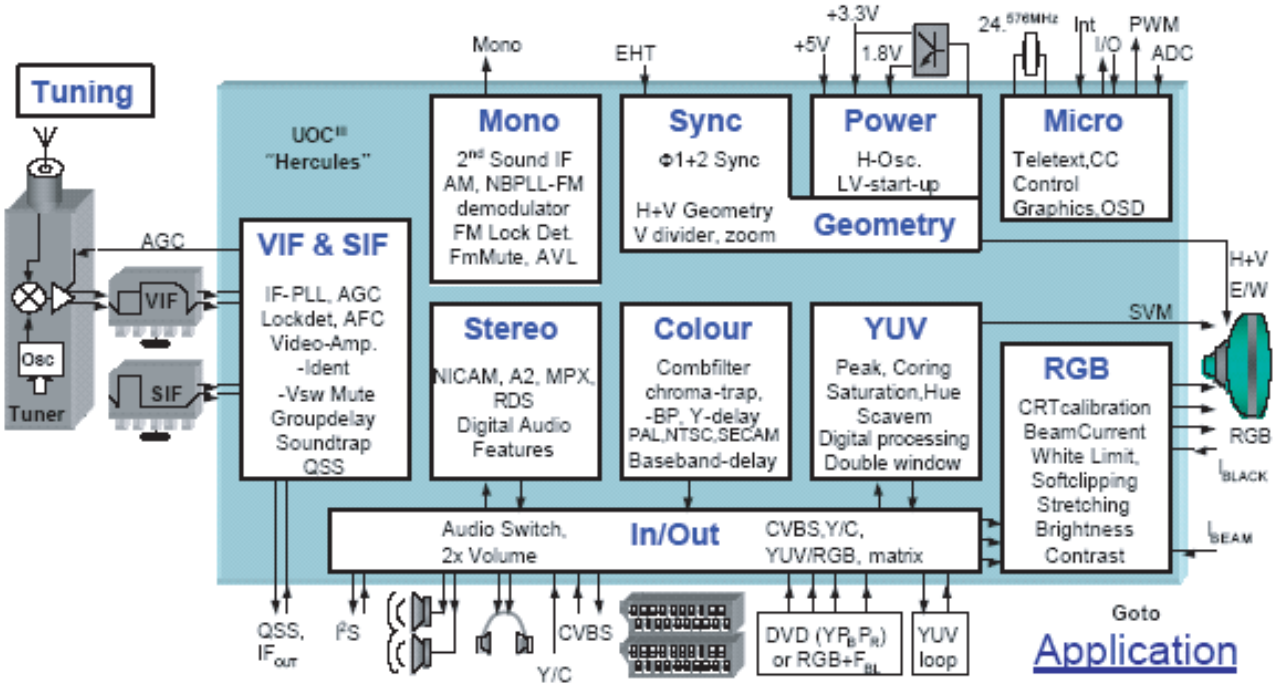
7. Block Diagram

7-1 Overall Block Diagram

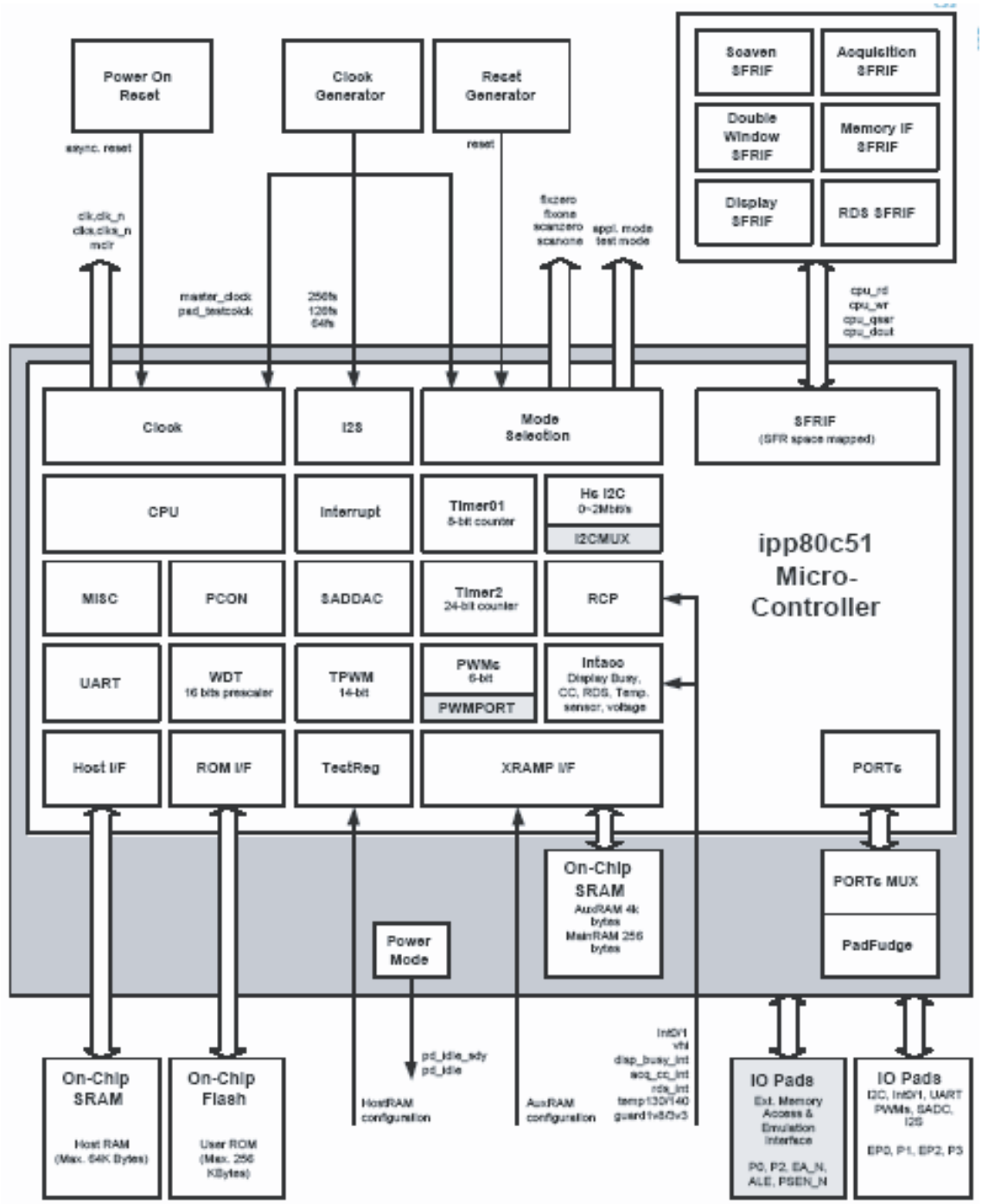


7-2 Partial Block Diagram

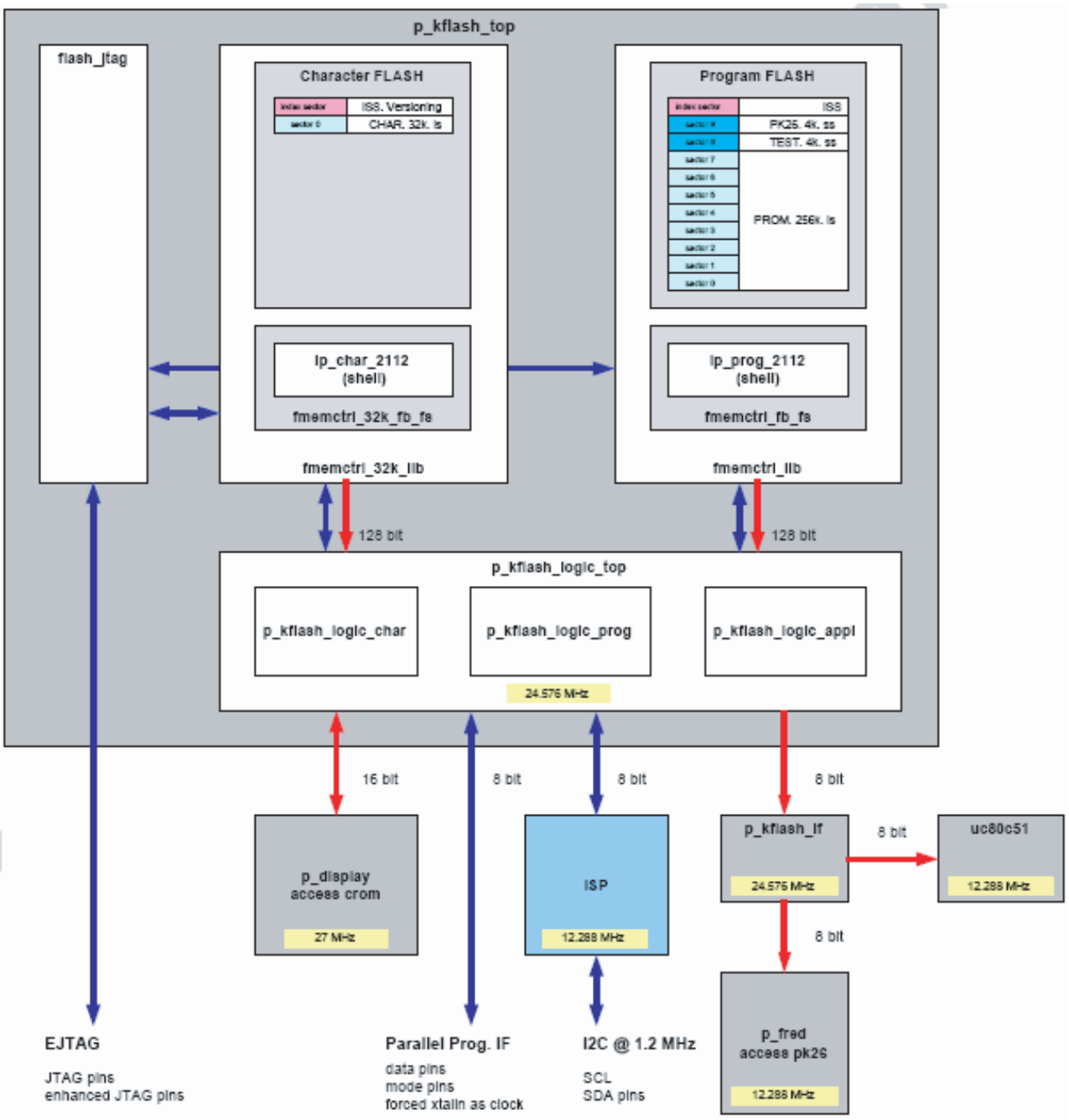
7-2-1 Functional blocks UOCIII



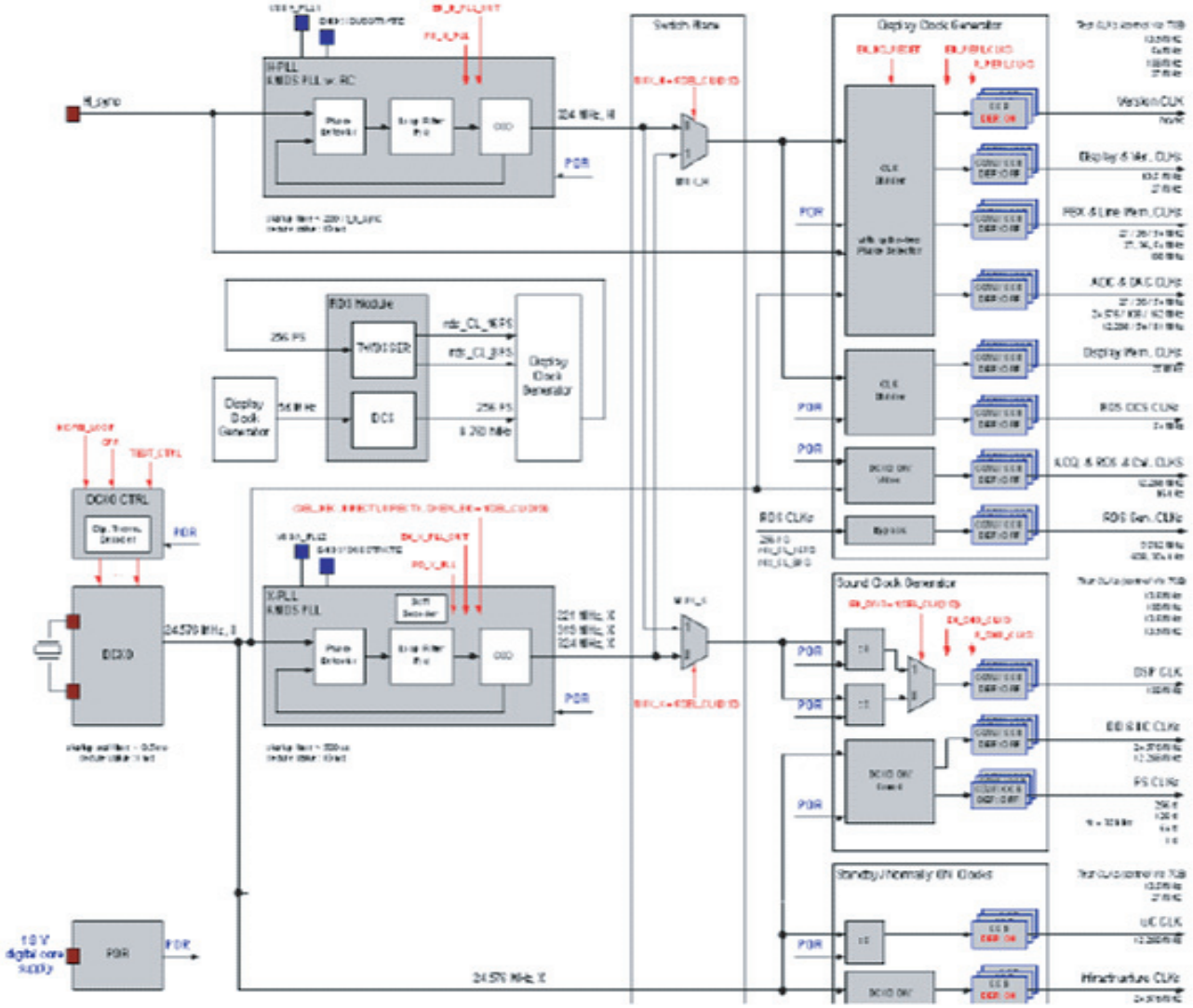
7-2-2 80C51 Microcontroller Block Diagram



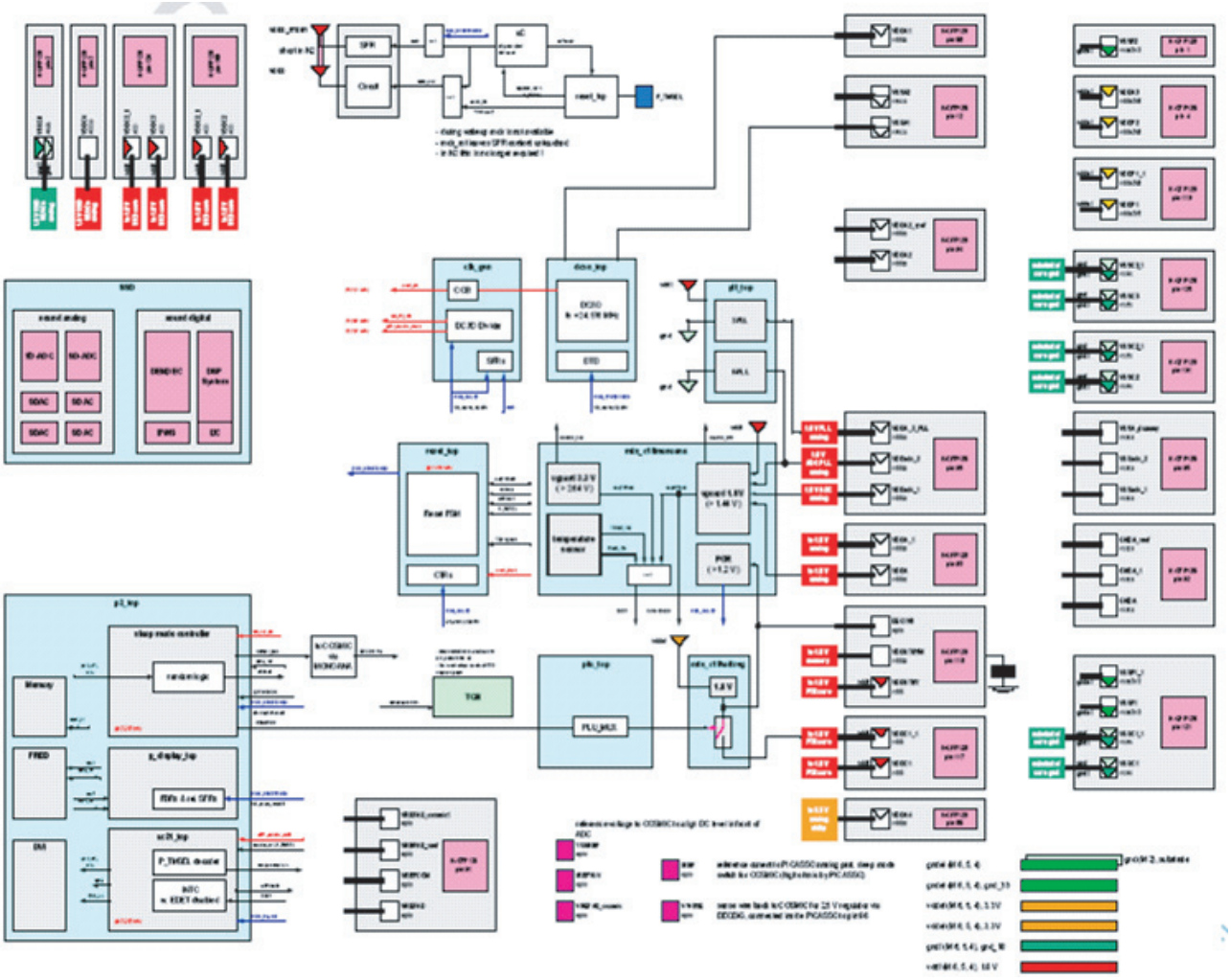
7-2-3 Flash Memory Block and Access Diagram



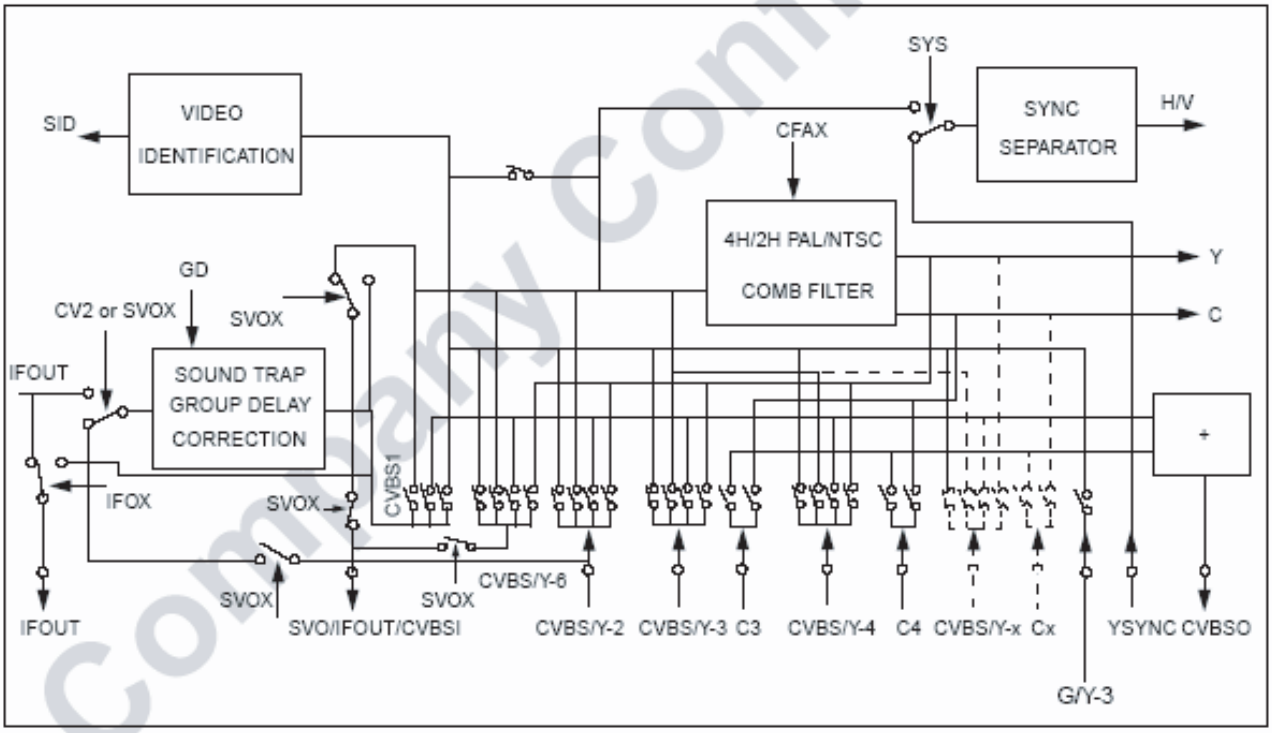
7-2-4 TCG m-Controller Clock System Diagram



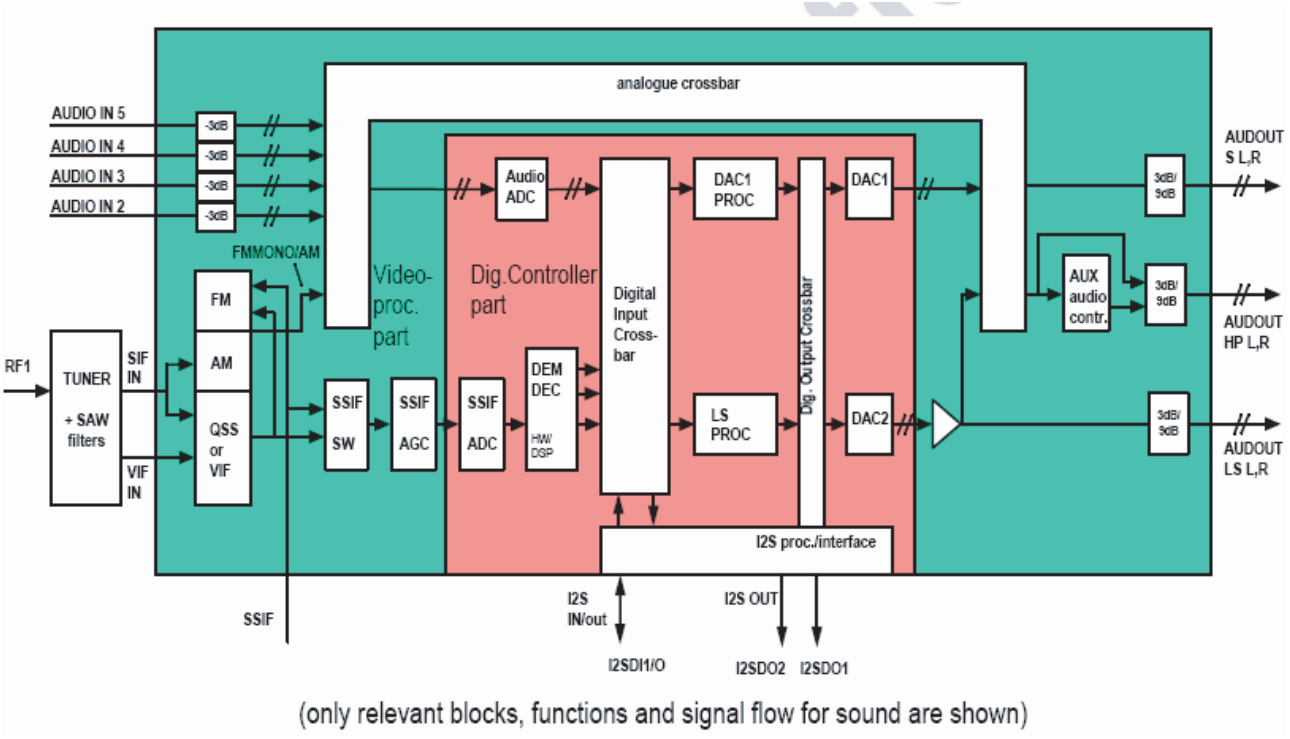
7-2-5 Supply Scheme with Voltage Guards and Power On Reset Unit



7-2-6 CVBS Switch

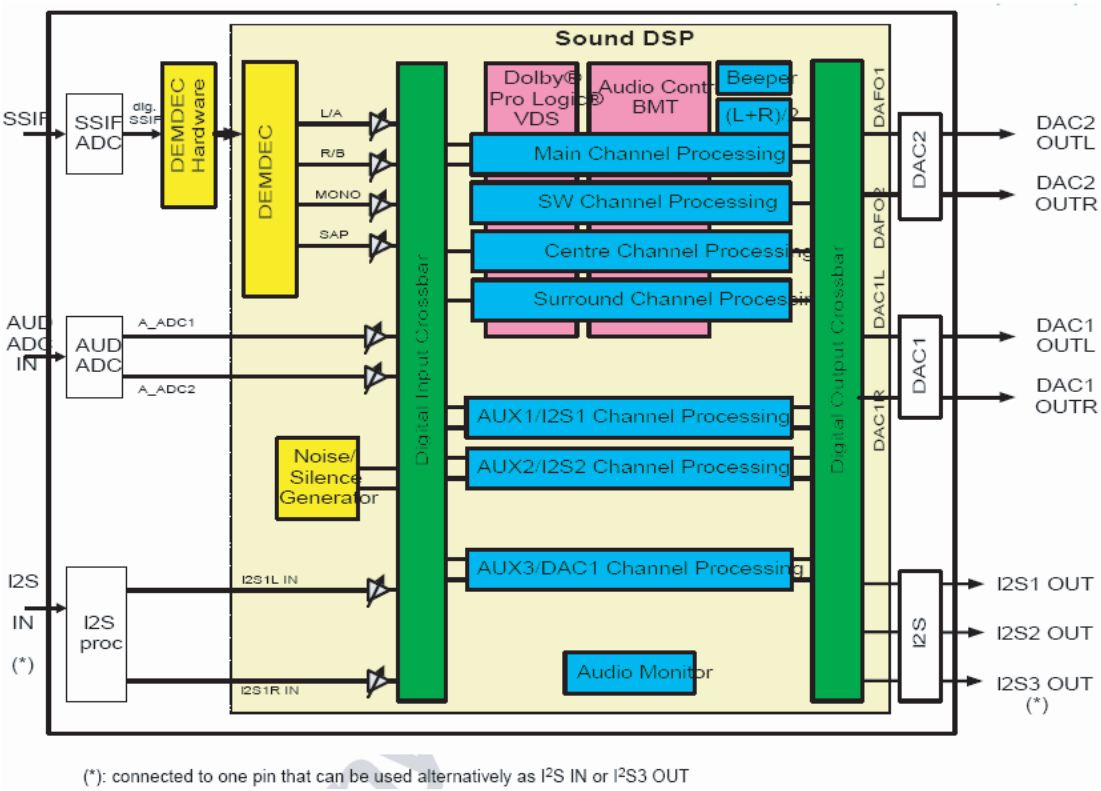


7-2-7 The UOCIII TV Sound Concept



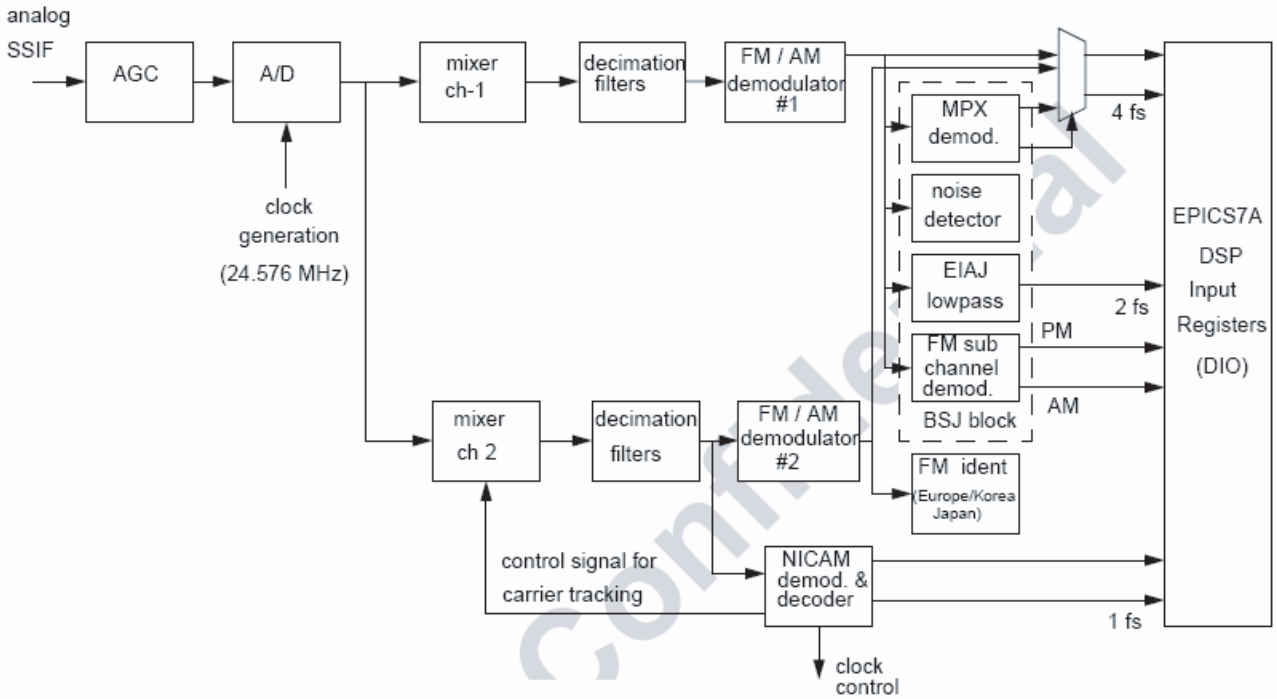
(only relevant blocks, functions and signal flow for sound are shown)

7-2-8 Overview of the UOCIII sound functions on the digital controller

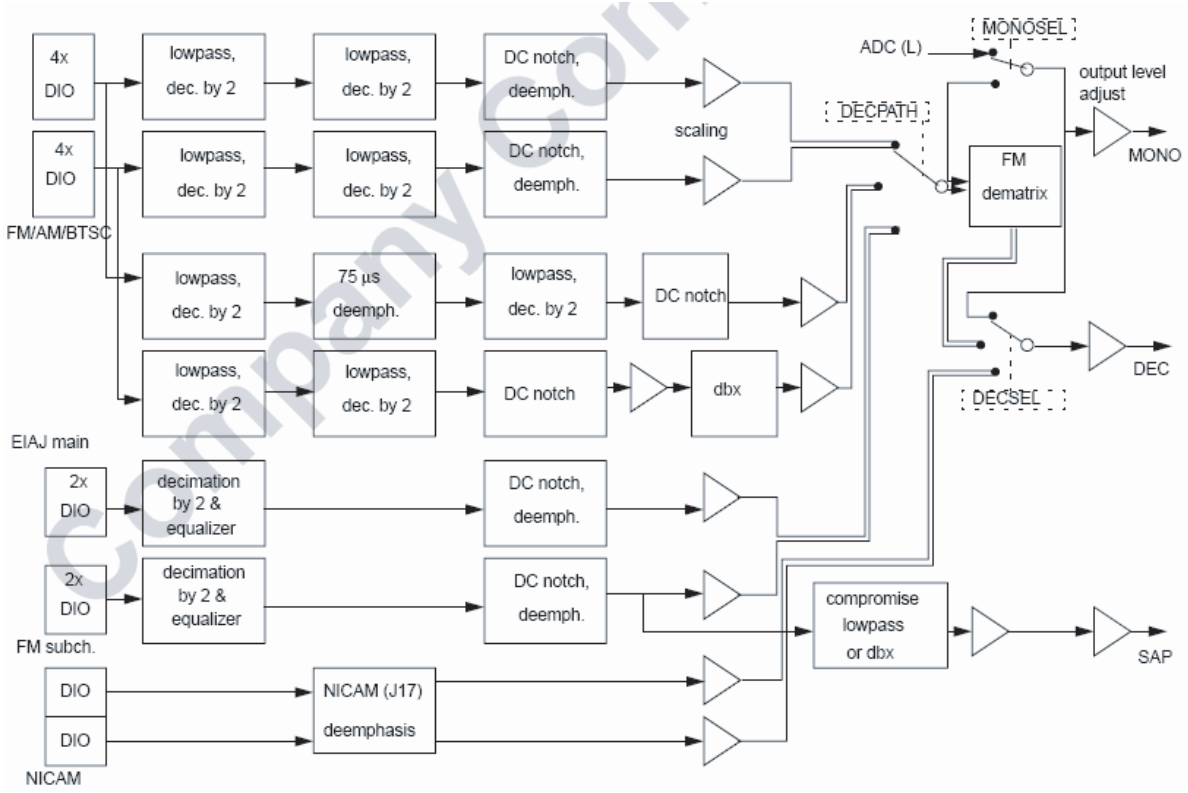


(*): connected to one pin that can be used alternatively as I²S IN or I²S3 OUT

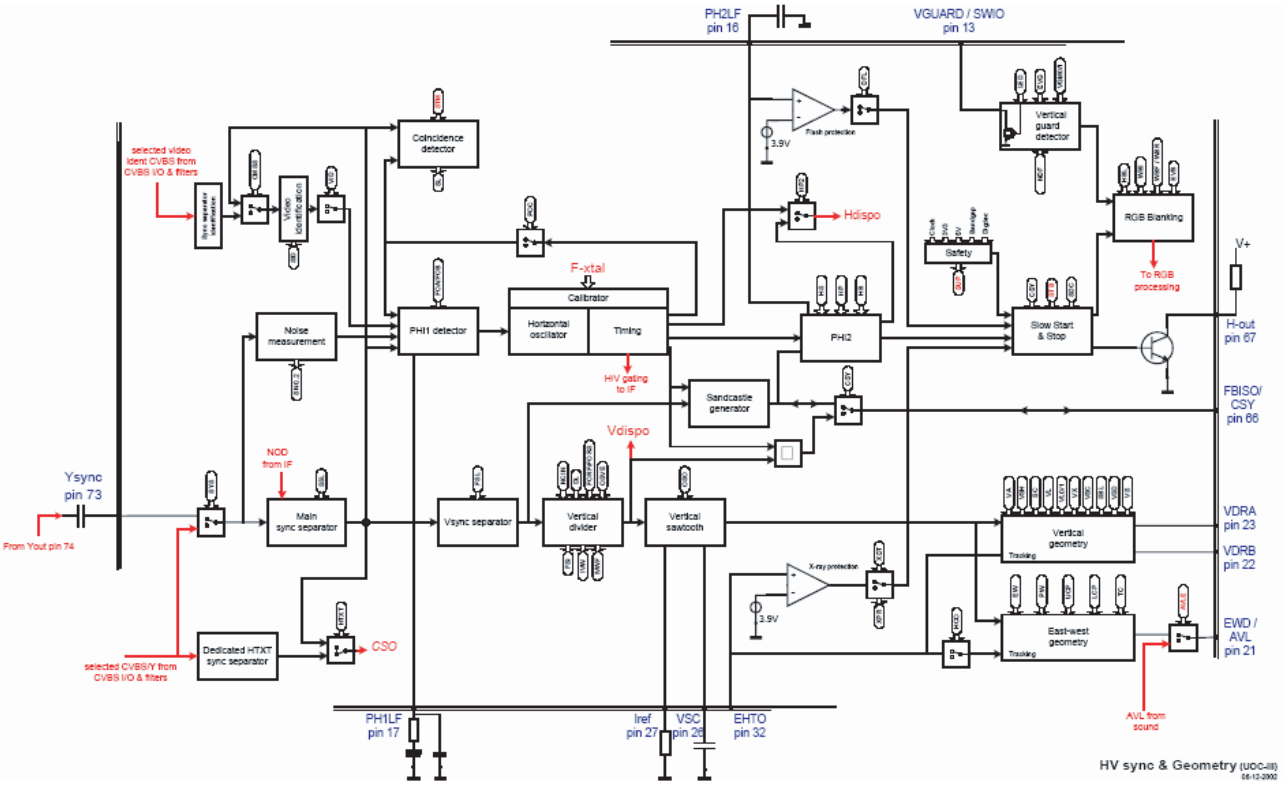
7-2-9 Demodulator and Decoder Block Diagram



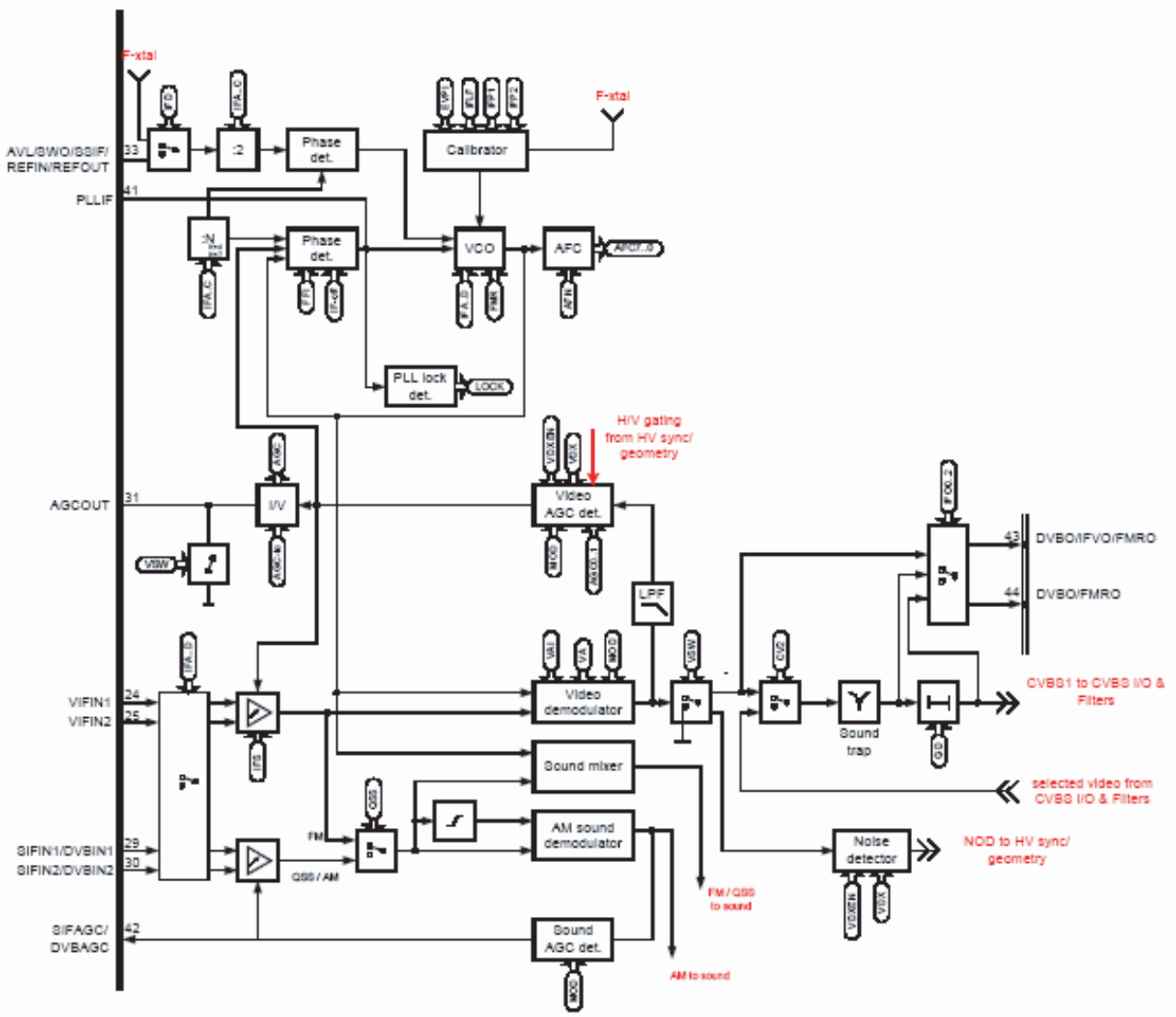
7-2-10 Signal processing modules



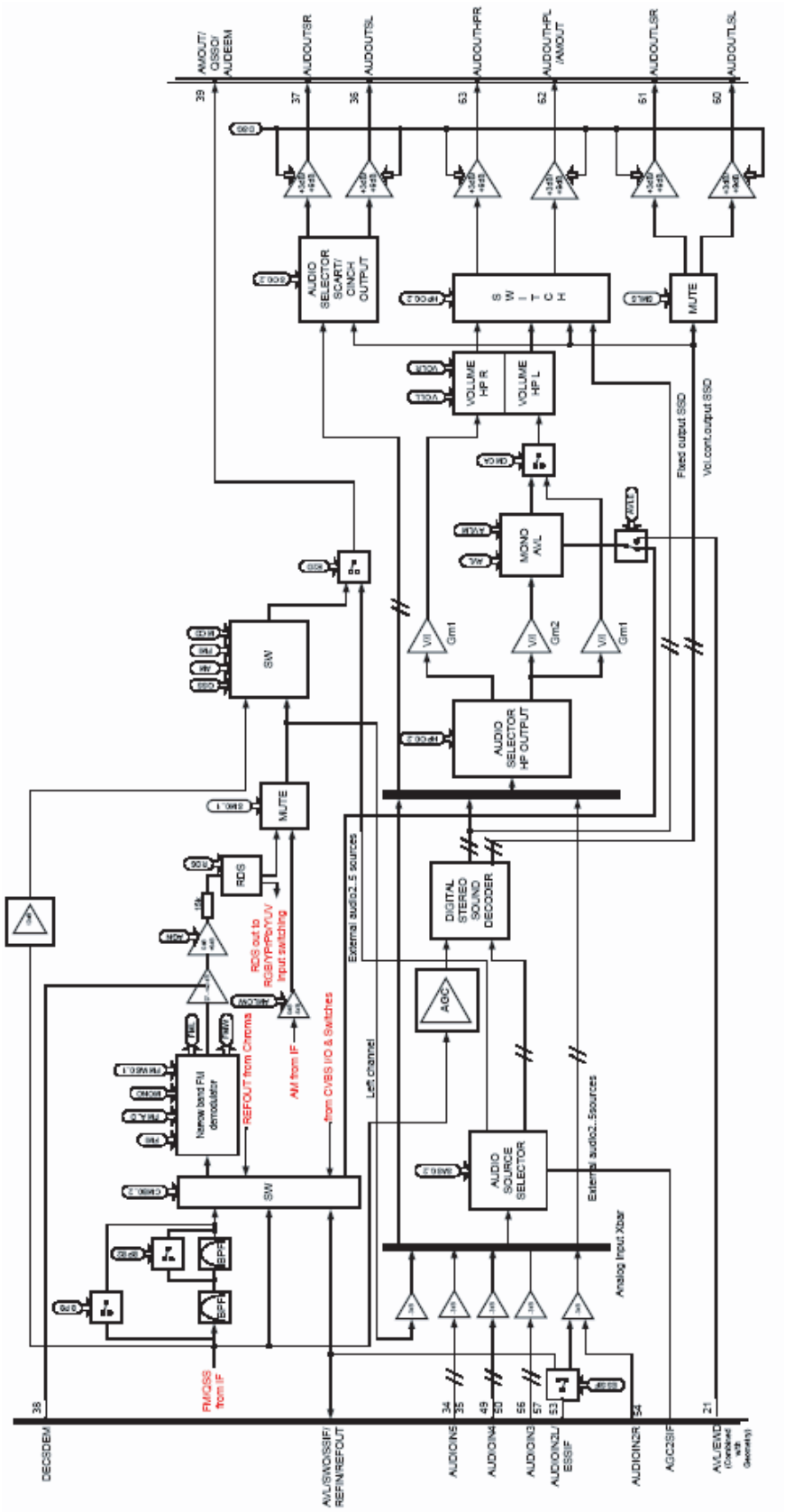
7-2-11 Syunc & Geometry block diagram



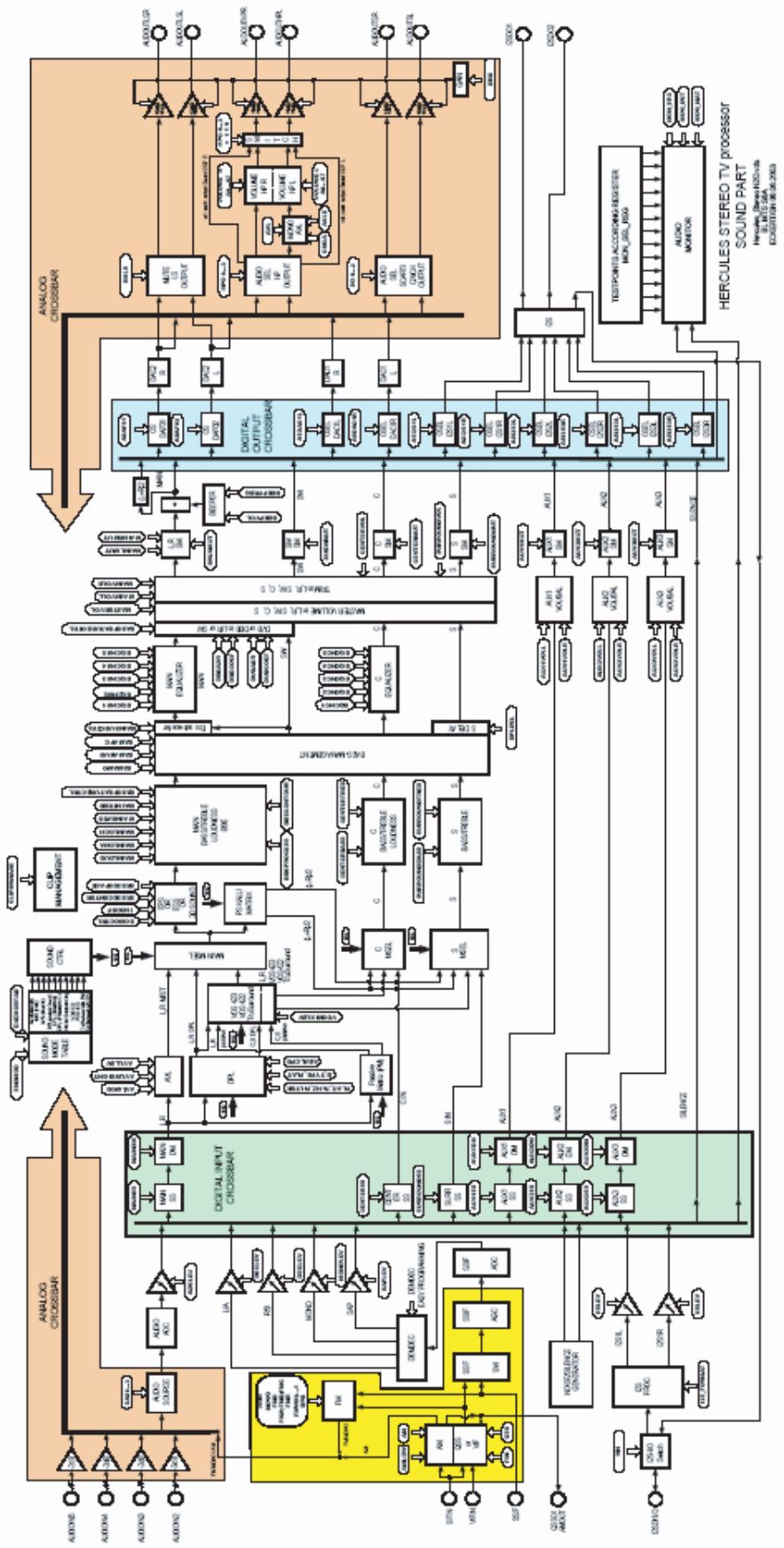
7-2-12 IF block diagram



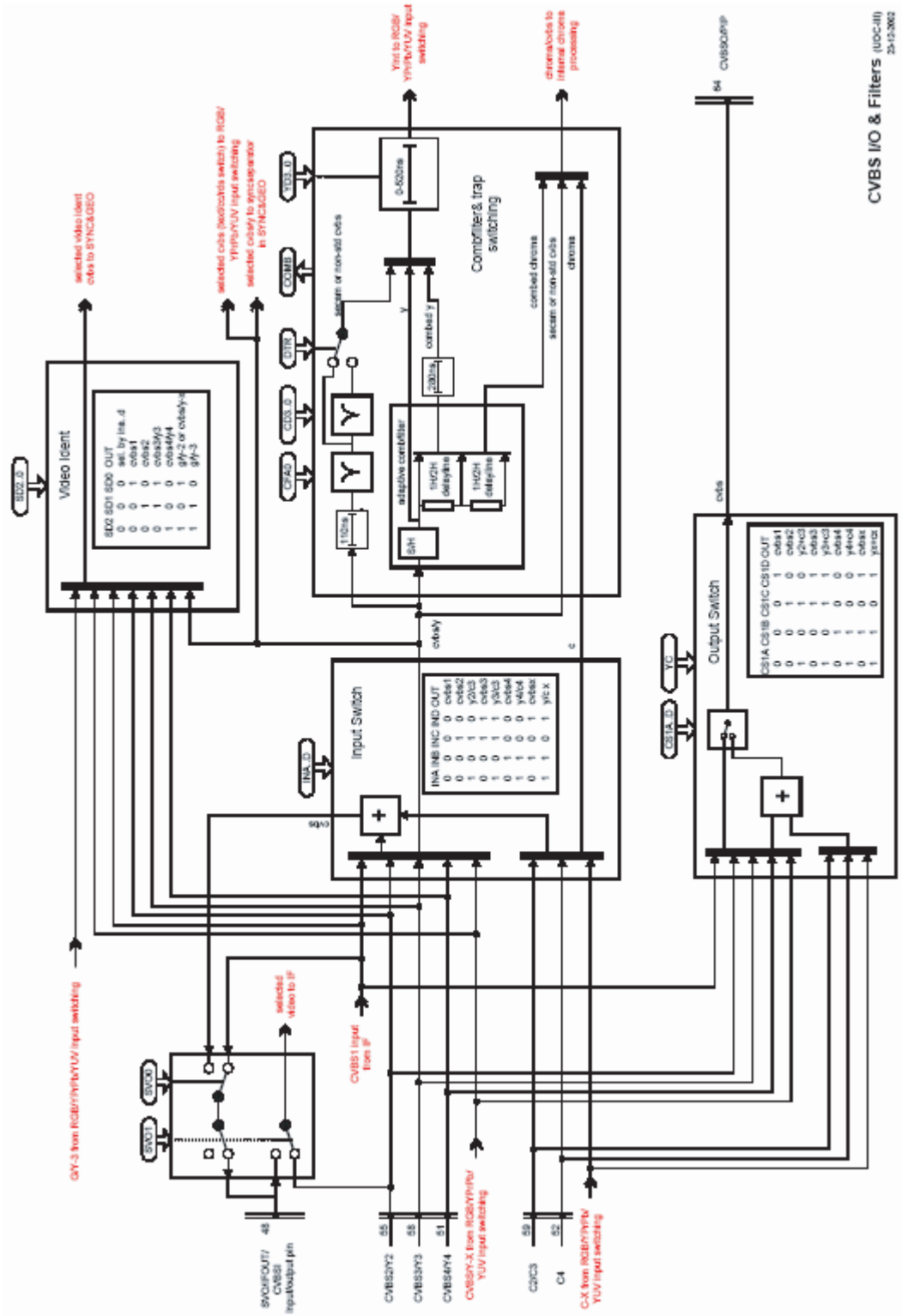
7-2-13 Analogue sound block diagram



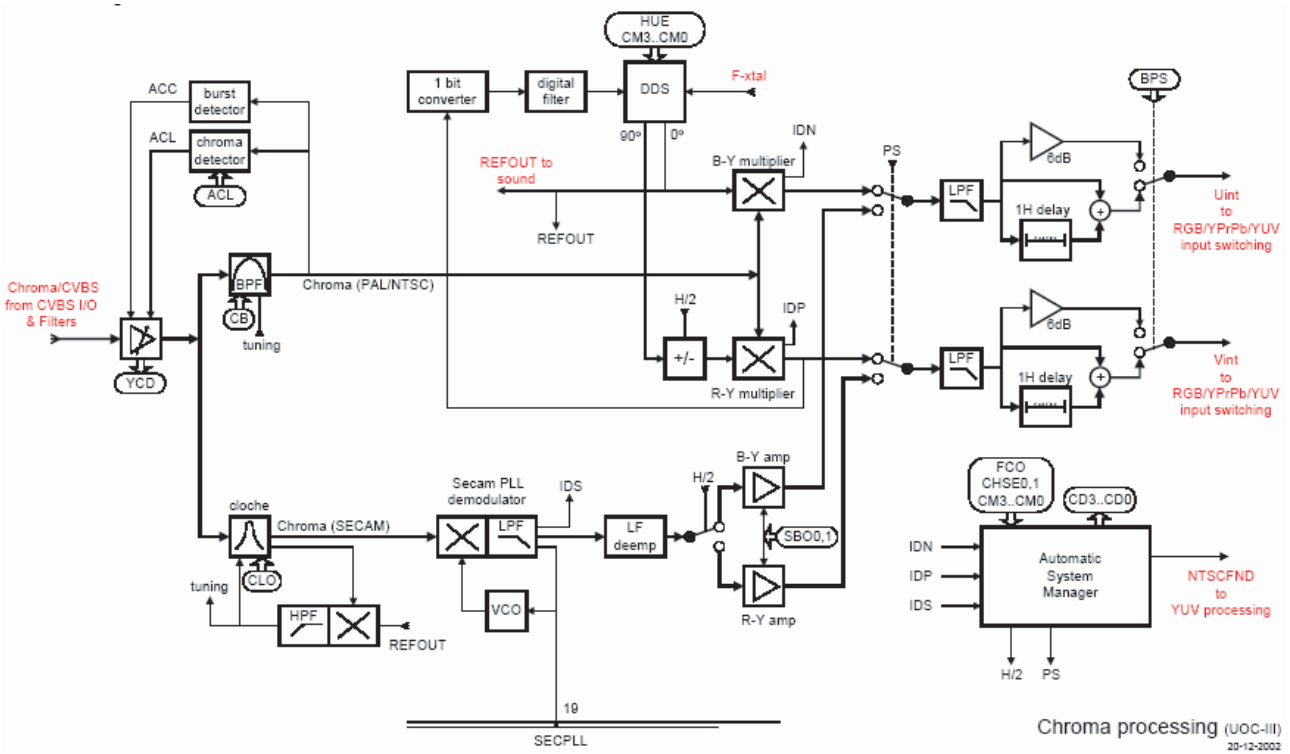
7-2-14 Block diagram stereo sound processor



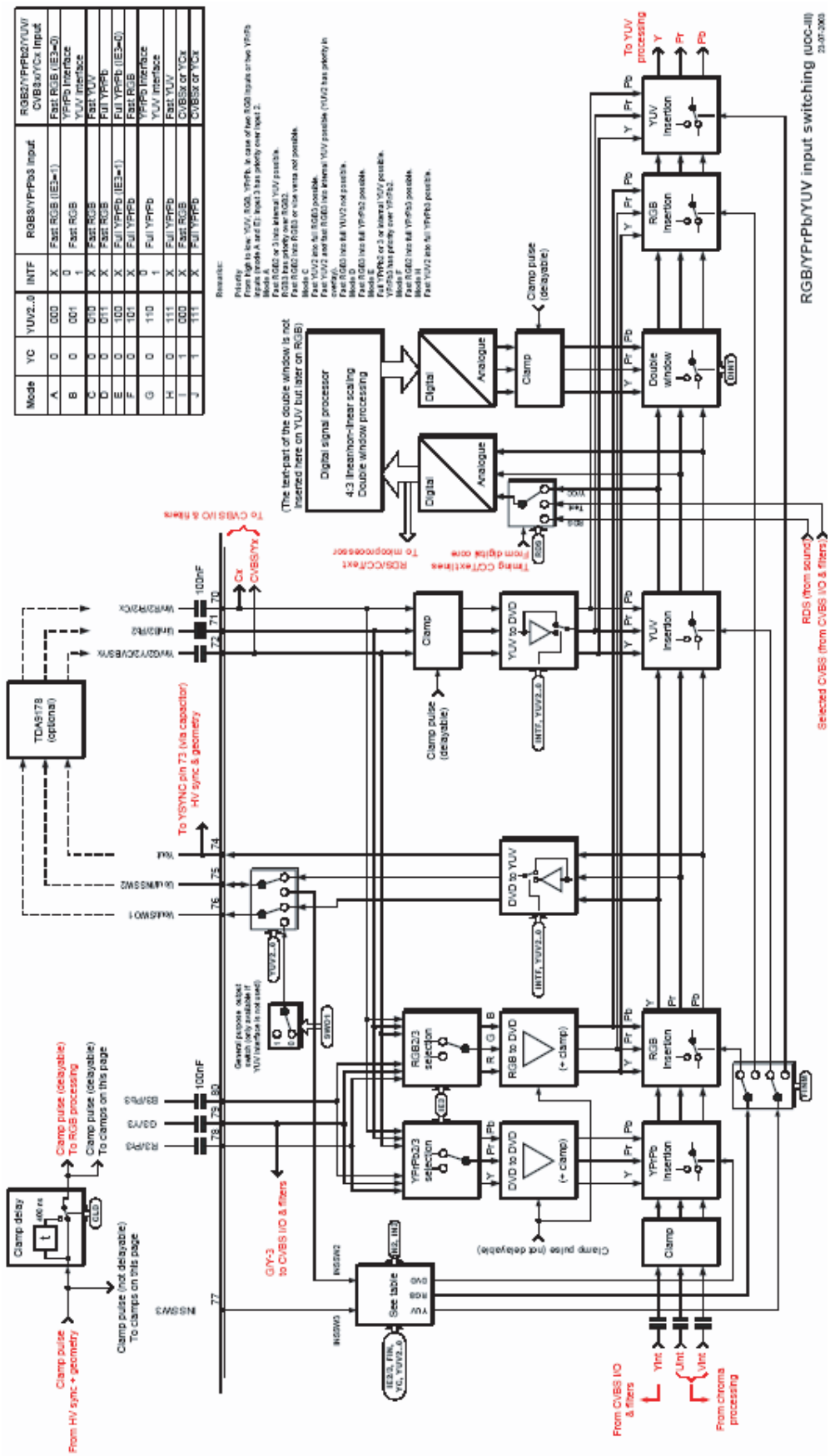
7-2-15 CVBS I/O & Filters block diagram



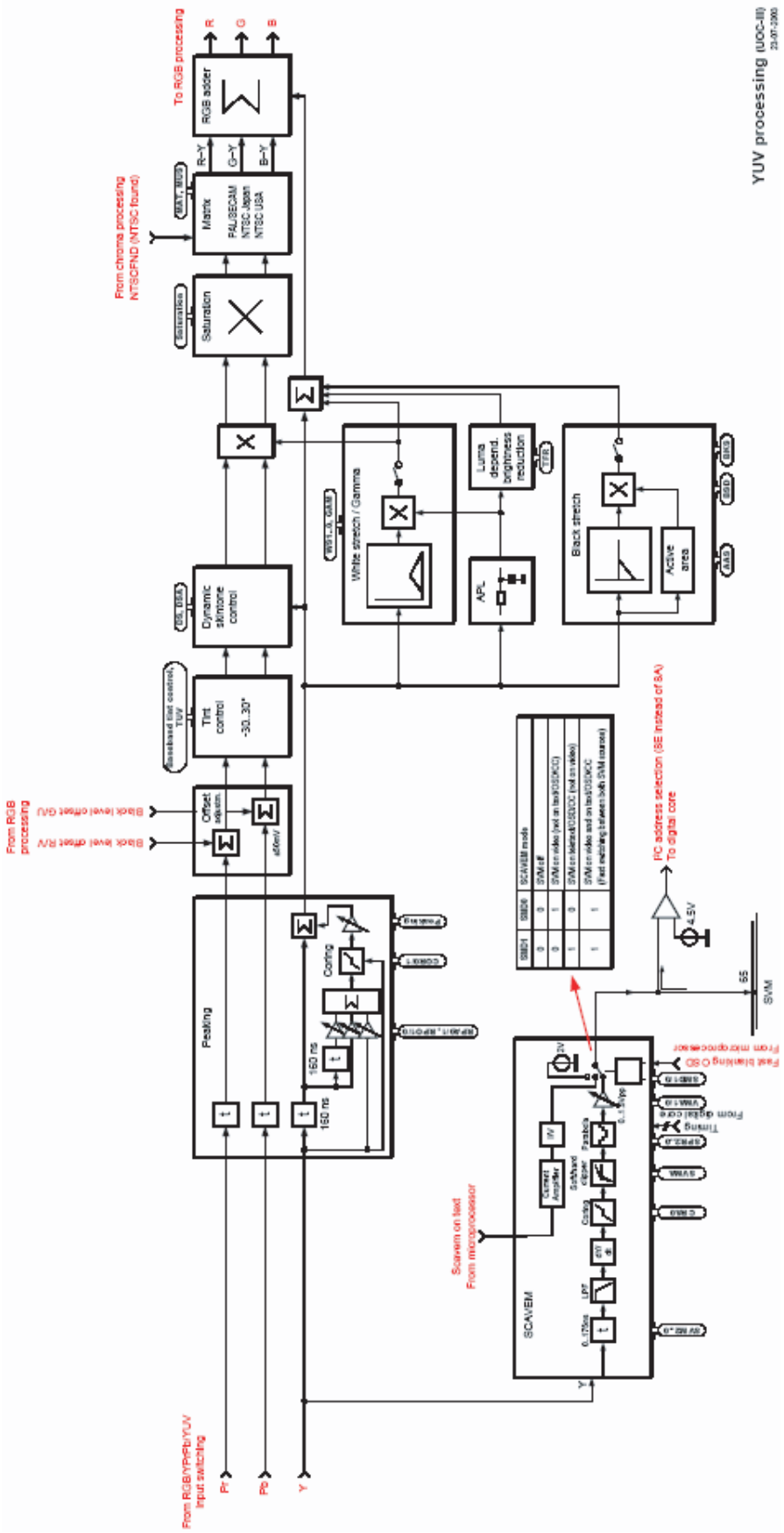
7-2-16 Chroma processing block diagram



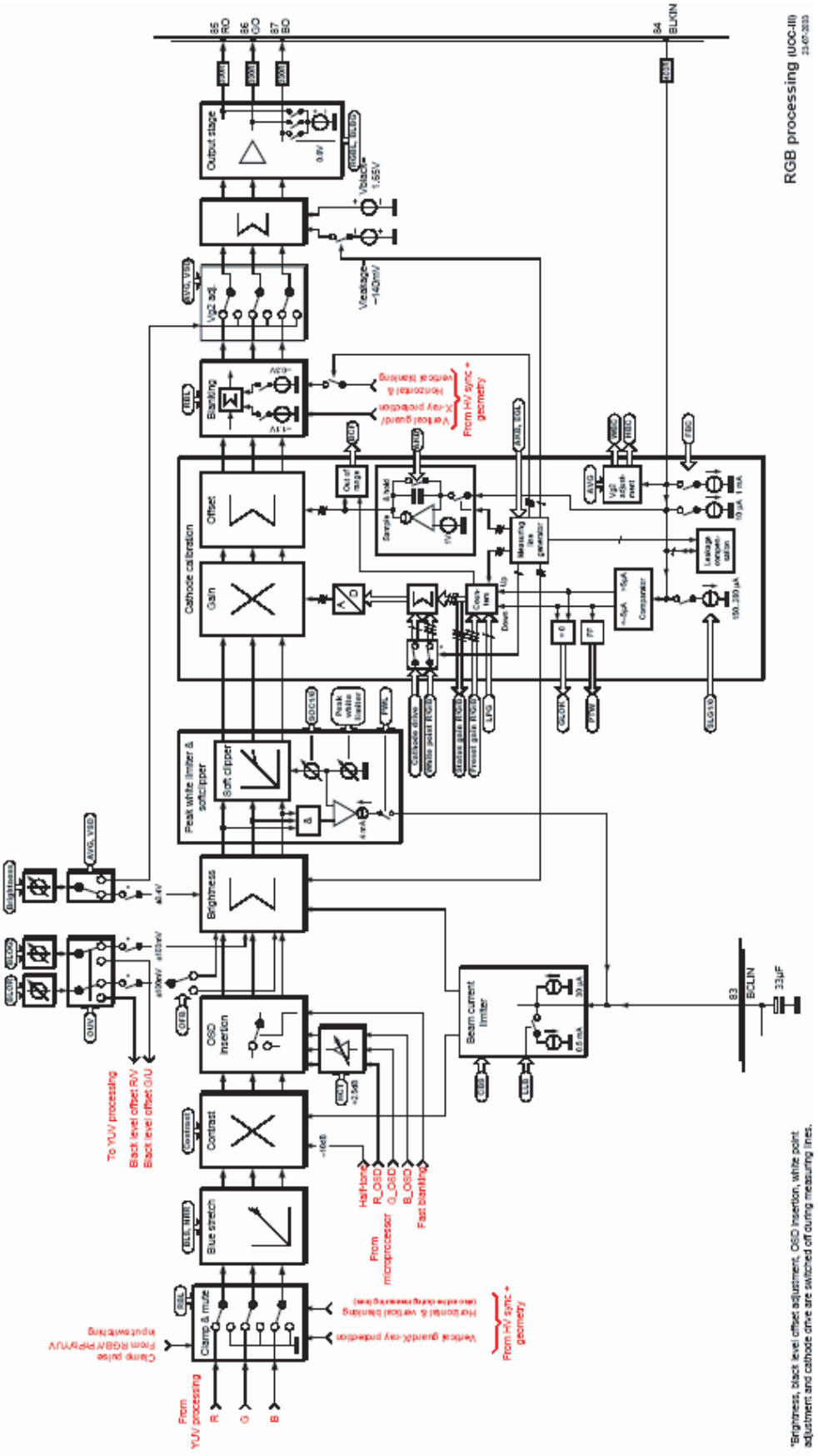
7-2-17 Chroma processing block diagram



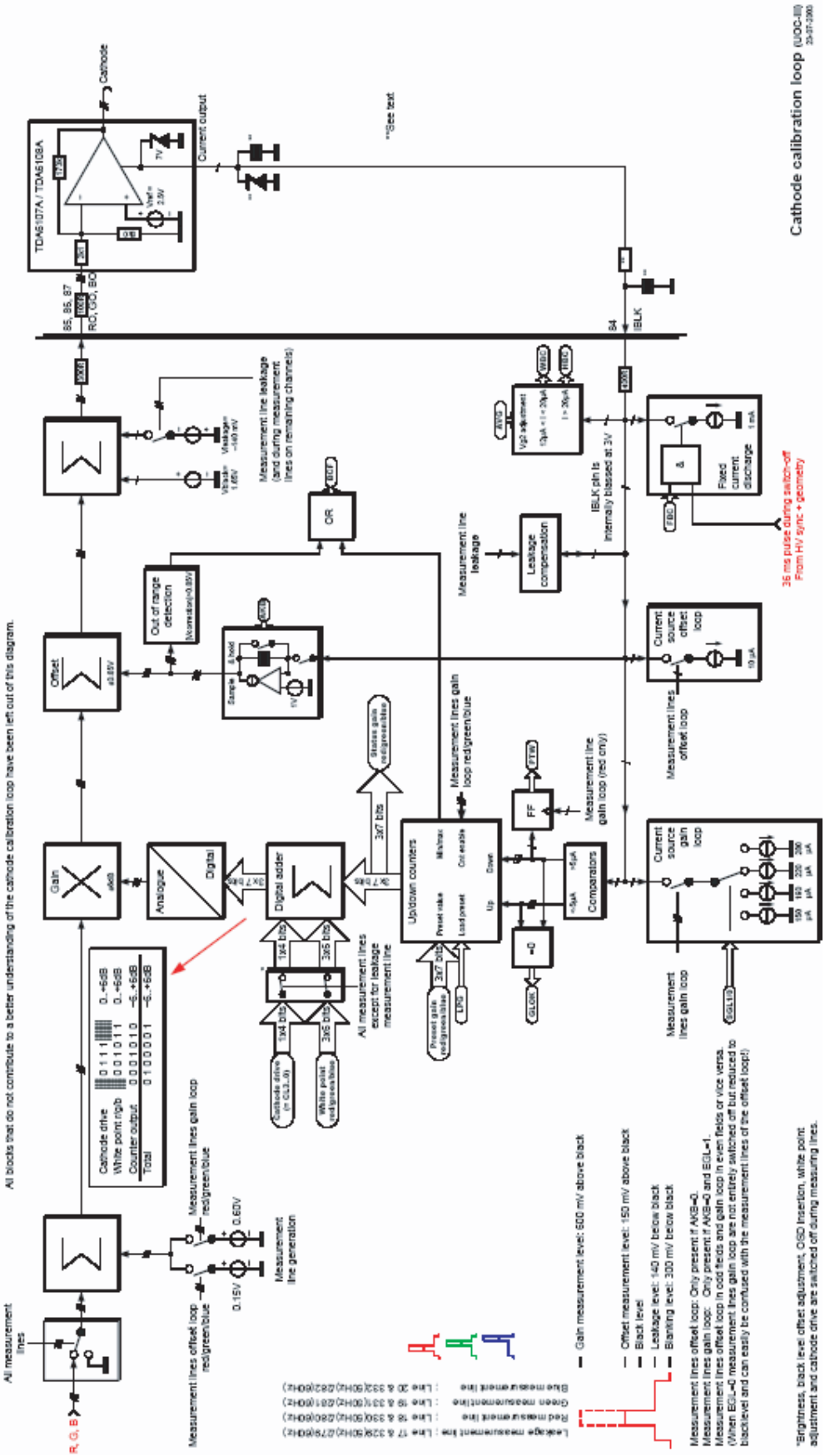
7-2-18 YUV processing block diagram



7-2-19 RGB processing block diagram



7-2-20 Cathode calibration loop block diagram

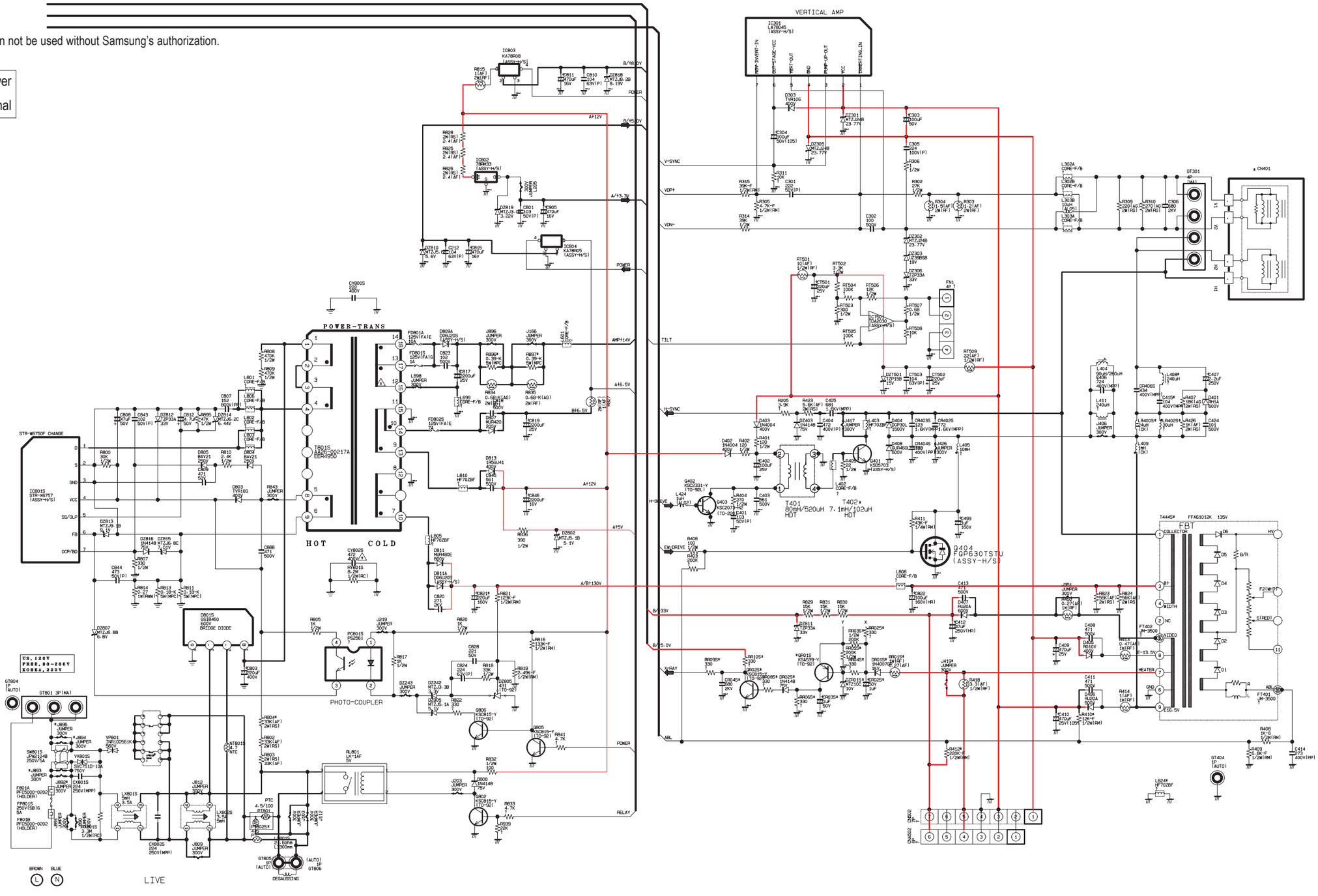

Cathode calibration loop (UOC-III)
25-07-2000
Cathode
TDA6107A / TDA6108A
Current output
**see text
85, 86, 87
R/O, G/O, B/O
84
IBLK
Measurement line leakage (and during measurement lines on remaining channels)
OR
Out of range detection
Offset
Gain
Analogue
Digital
Digital adder
Sample & hold
Measurement line leakage
Leakage compensation
IBLK pin is internally biassed at 3V
Fixed current discharge
36 ms pulse during switch-off
From HV sync + geometry
Current source offset loop
Measurement lines offset loop
Measurement lines gain loop red/green/blue
Up/down counters
Preset value
Load preset
Clock enable
Up
Down
FF
Measurement line gain loop (red only)
Comparators
Current source gain loop
Measurement lines gain loop
All measurement lines except for leakage measurement line
Cathode drive
White point: rg/b
Counter output
Total
All blocks that do not contribute to a better understanding of the cathode calibration loop have been left out of this diagram.
All measurement lines
R, G, B
Measurement lines offset loop red/green/blue
Measurement line generation
0.60V
0.15V
Gain measurement level: 600 mV above black
Offset measurement level: 150 mV above black
Black level
Leakage level: 140 mV below black
Blanking level: 300 mV below black
Measurement lines offset loop: Only present if AKB=0.
Measurement lines gain loop: Only present if AKB=0 and EGL=1.
Measurement lines offset loop in odd fields and gain loop in even fields or vice versa.
(When EGL=0 measurement lines gain loop are not entirely switched off but reduced to blacklevel and can easily be confused with the measurement lines of the offset loop!)
*Brightness, black level offset adjustment, OSD insertion, white point adjustment and cathode drive are switched off during measuring lines.

10. Schematic Diagram

10-1 POWER & DEFLECTION BLOCK

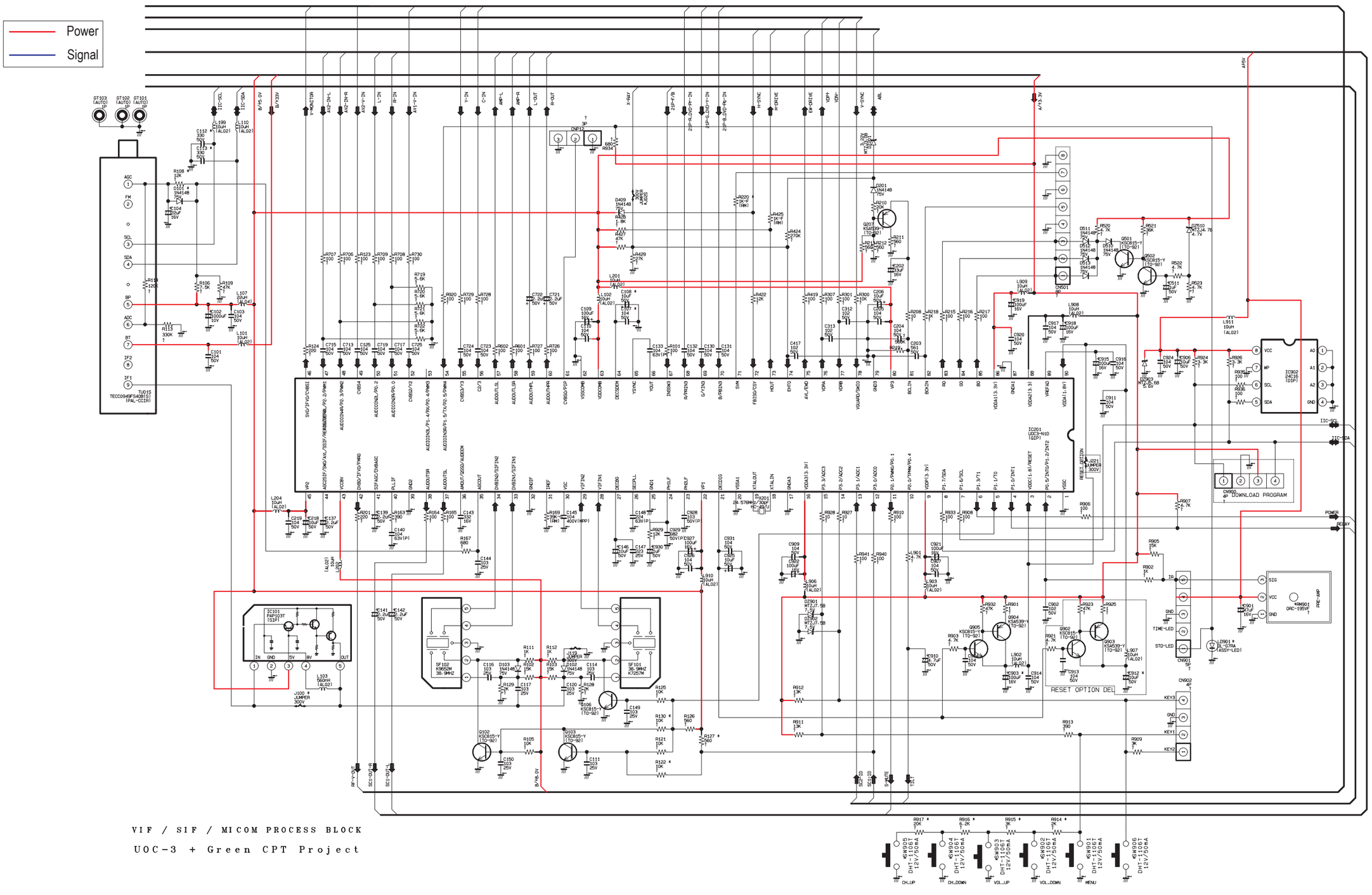
This Document can not be used without Samsung's authorization.

Power
Signal



10-2 IF & UOC(CHROMA_MICOM)BLOCK

This Document can not be used without Samsung's authorization.



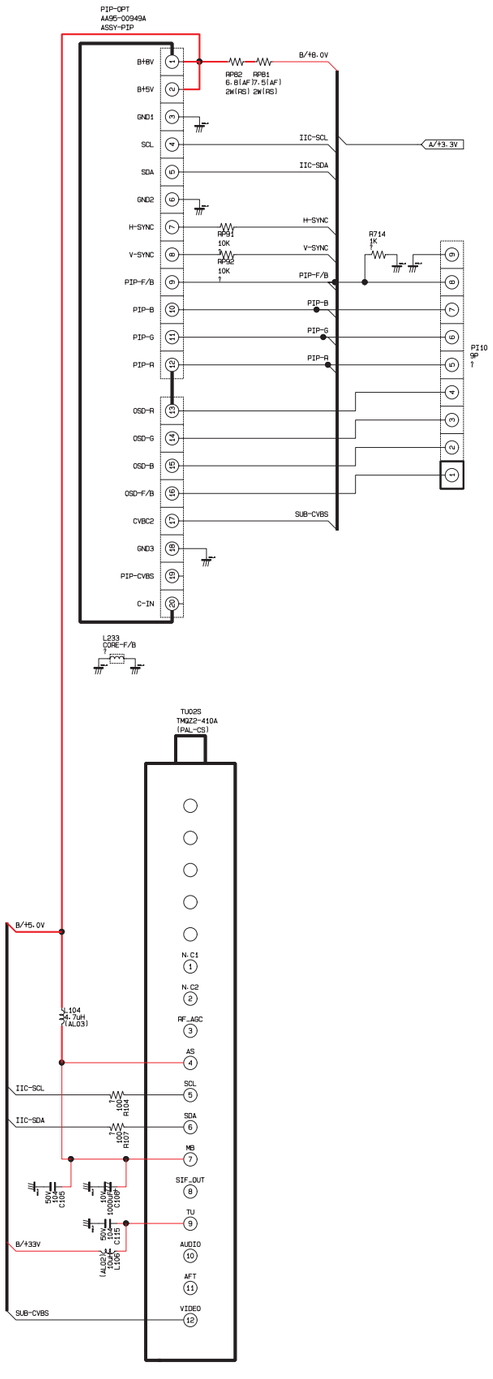
VIF / SIF / MICOM PROCESS BLOCK

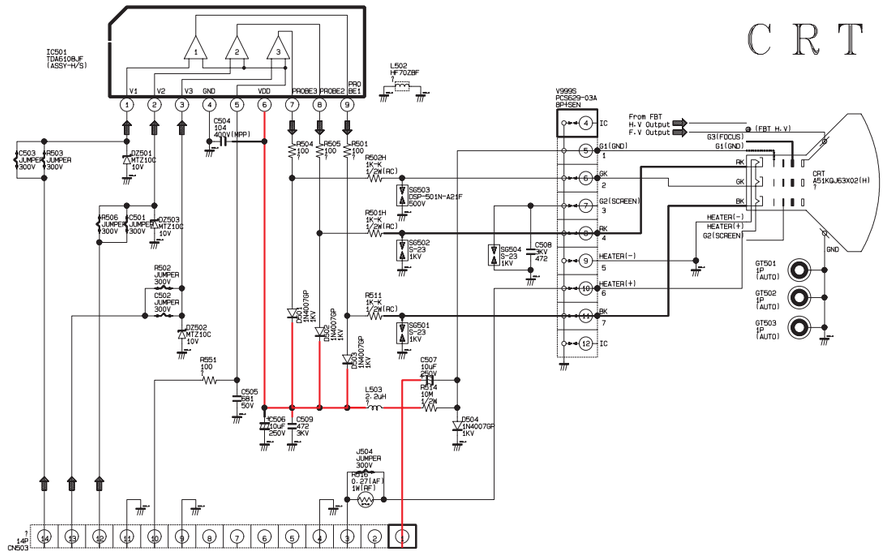
UOC-3 + Green CPT Project

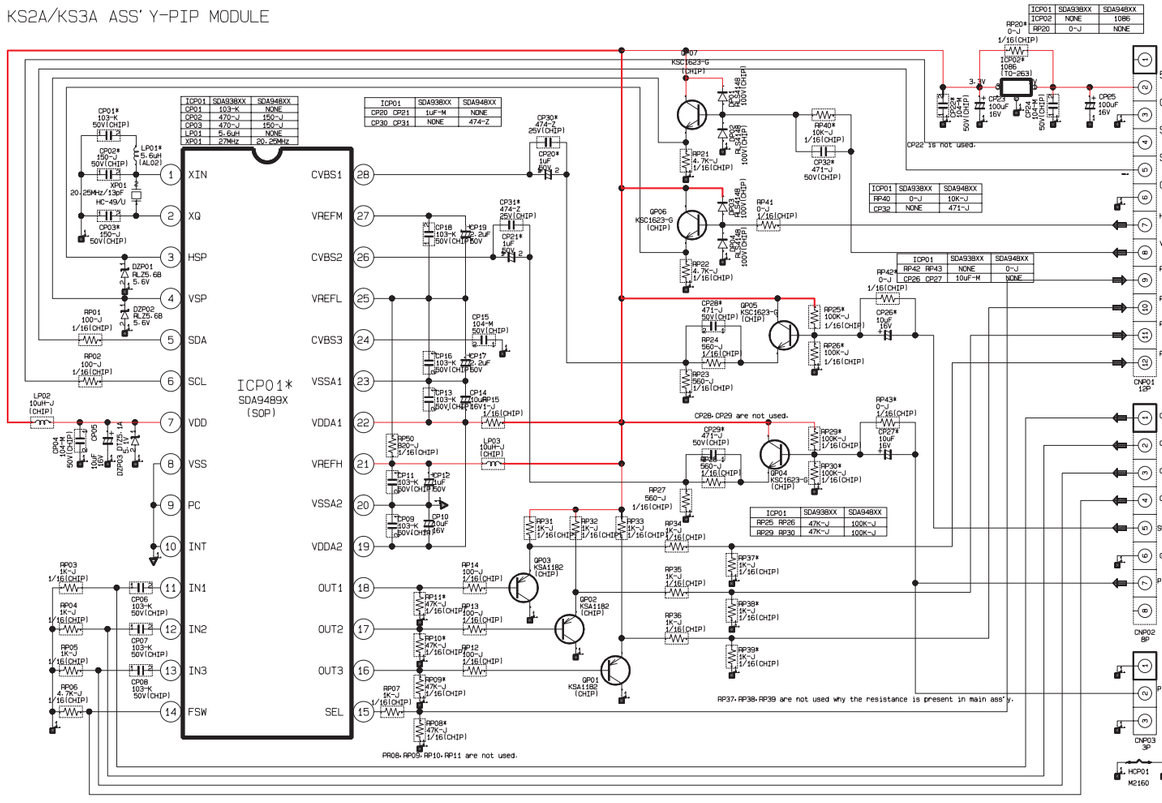
10-3 PIP & CRT BLOCK

This Document can not be used without Samsung's authorization.

Power
Signal

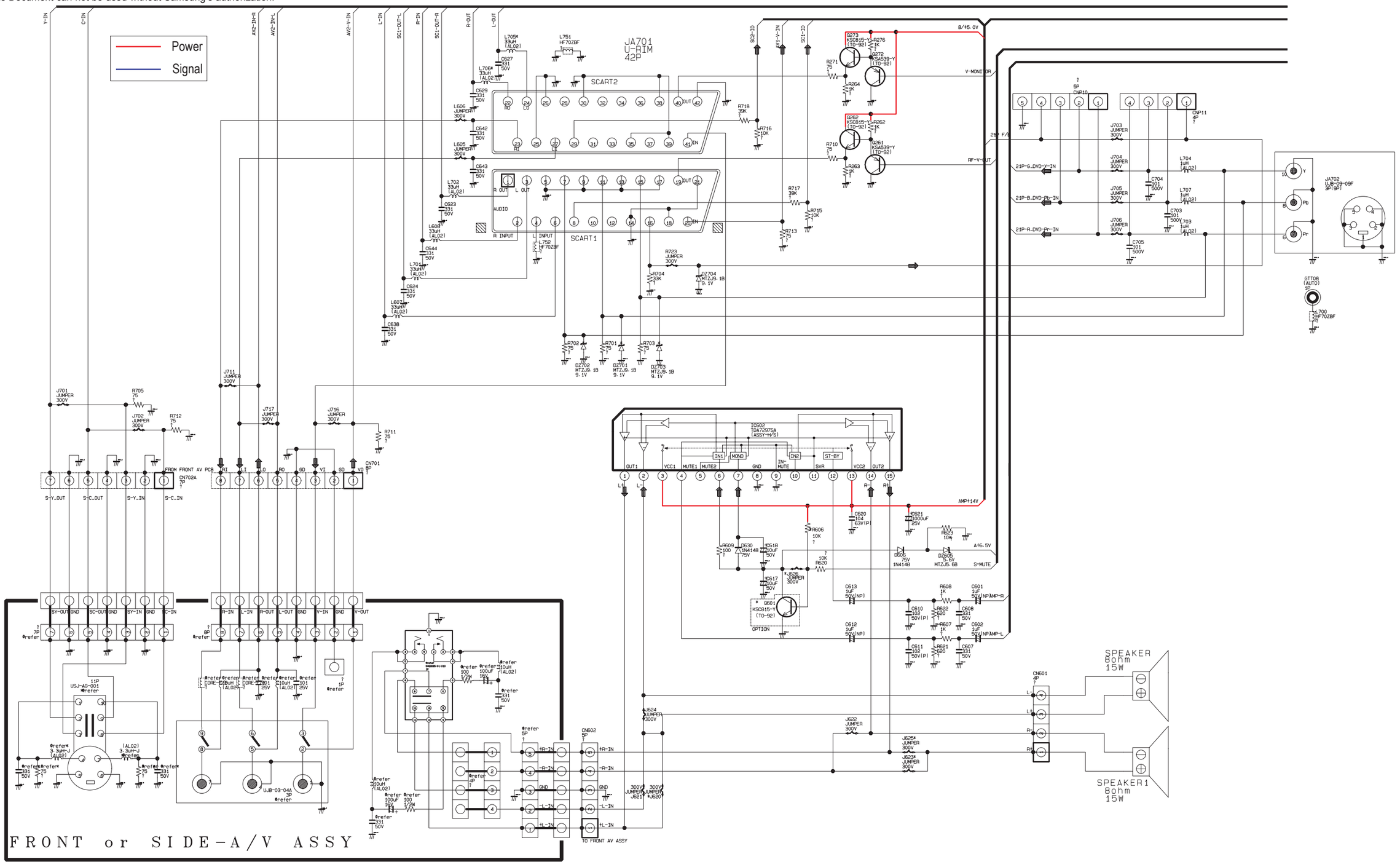





KS2A/KS3A ASS'Y-PIP MODULE
ICP01* SDA9489X (SOP)
XIN XO HSP VSP SDA SCL VDD VSS PC INT IN1 IN2 IN3 FSW
CVBS1 VREFM CVBS2 VREFL CVBS3 VSSA1 VDDA1 VREFH VSSA2 VDDA2 OUT1 OUT2 OUT3 SEL
PR08-RP09-RP10-RP11 are not used.
CP22 is not used.
CP28~CP29 are not used.
RP37~RP38~RP39 are not used why the resistance is present in main ass'y.
5V GND SCL SDA GND H-SYNC V-SYNC PIP-F/B PIP-B PIP-G PIP-R
CNP01 15P
OSD-R OSD-G OSD-B OSD-F/B SUB-CVBS GND PIP-CVBS
CNP02 8P
PIP-CVBS
CNP03 3P
HCP01 M2160

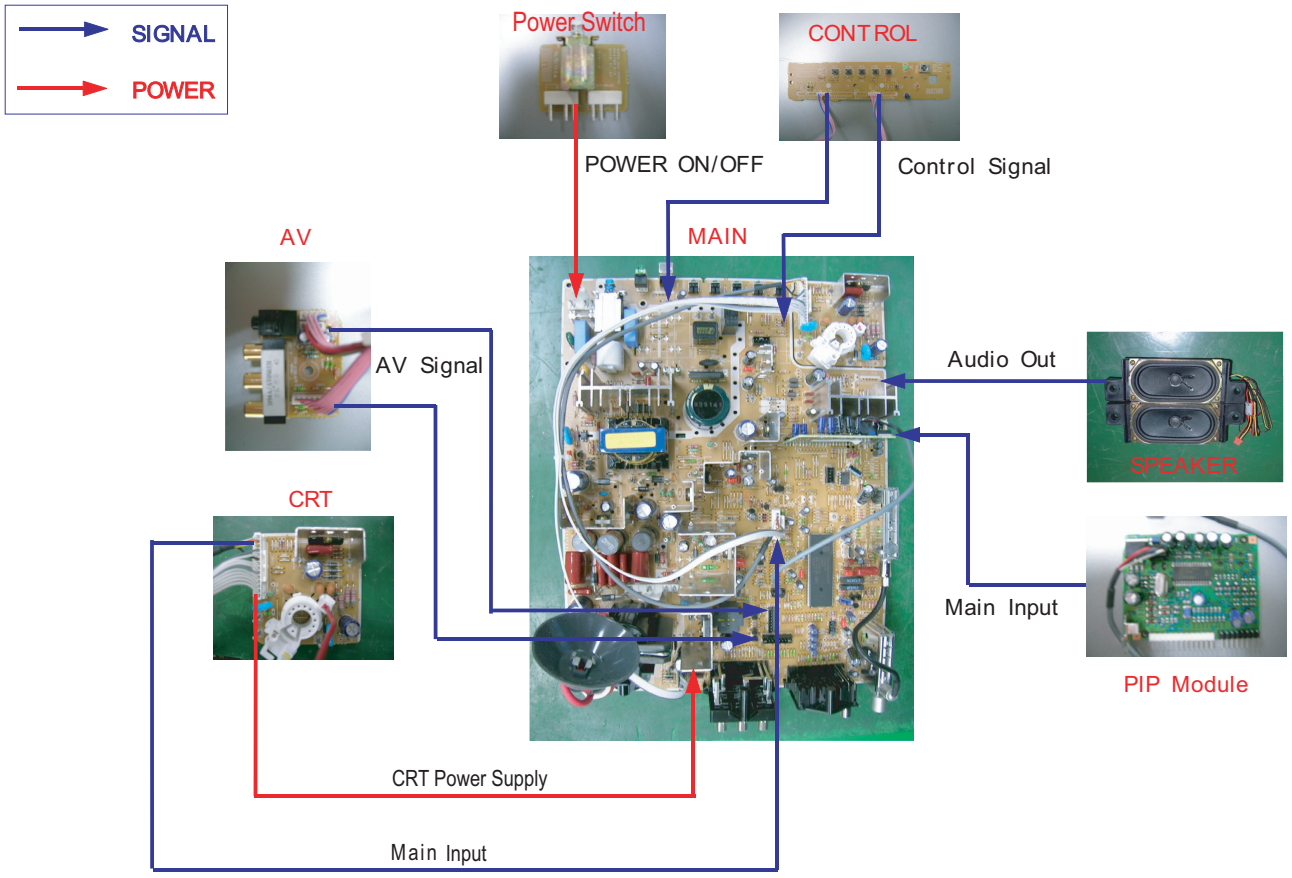
10-4 AV & SOUND BLOCK

This Document can not be used without Samsung's authorization.

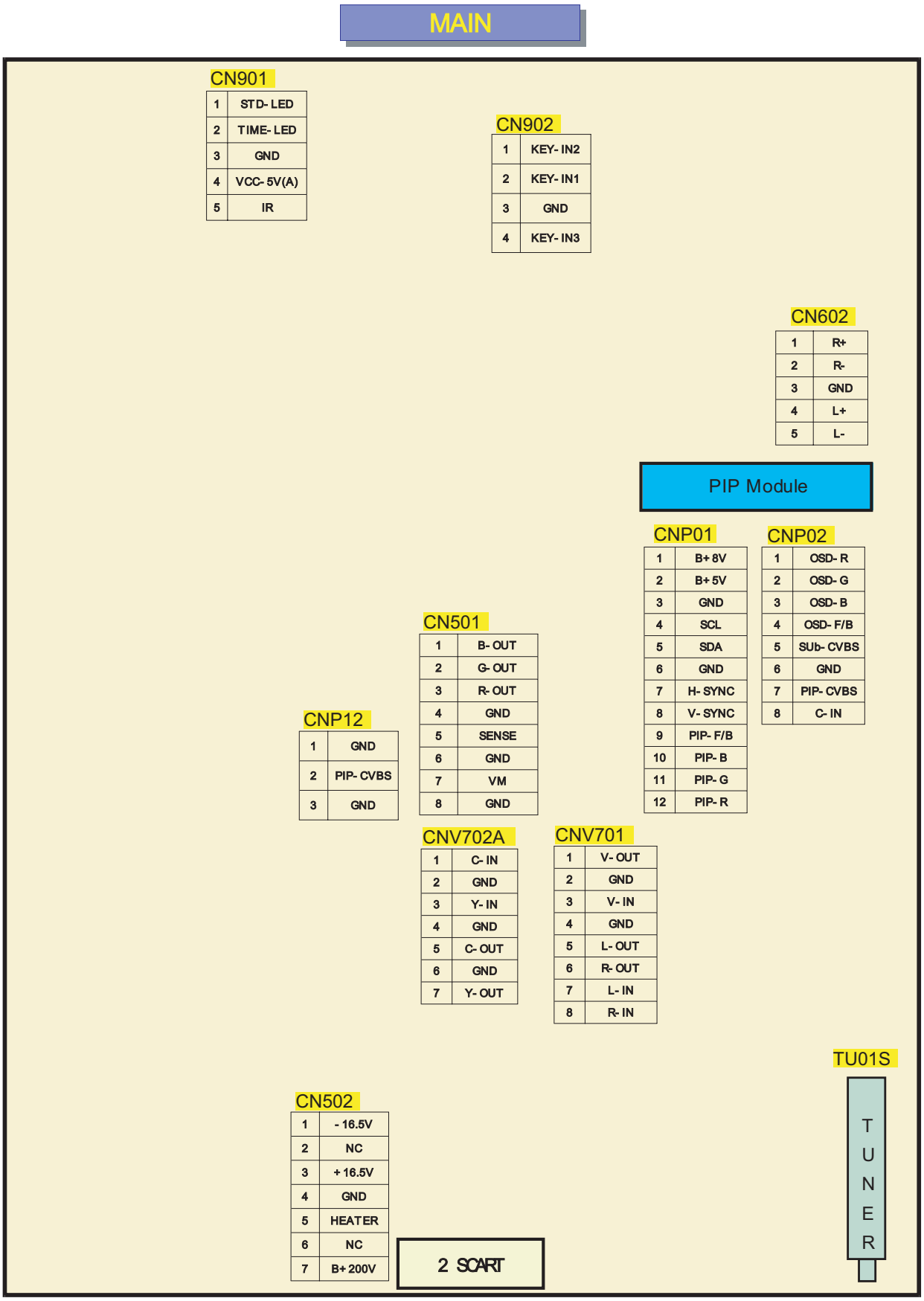


8. Wiring Diagram

8-1 Overall Wiring



8-2 Pin Connection



5. Electrical Part List

5-1 CW29M064N2XXEC

You can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
		ASSY CHASSIS				
M0017	AA91-09482A	ASSY CHASSIS	CW29M164N2XXEC,S16A,AK,ELDO	1	S.N.A	
M0014	AA94-15536A	ASSY PCB MAIN	CW29M164N2XXEC,S16A,AK,ELD	1		
C101	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C102	2401-003578	C-AL	1000uF,20%,10V,GP,TP,8x20mm,5	1		
C103	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C104	2401-000302	C-AL	100uF,20%,25V,GP,TP,6.3x11,5	1		
C107	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C108	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C109	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C110	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C115	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C116	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C117	2202-000127	C-CERAMIC,MLC-AXIAL	10nF,+80-20%,25V,Y5V	1		
C120	2202-000127	C-CERAMIC,MLC-AXIAL	10nF,+80-20%,25V,Y5V	1		
C125	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C130	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C131	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C132	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C133	2305-000665	C-FILM,LEAD-PEF	100nF,5%,63V,TP,7.5x4.0x	1		
C137	2401-000660	C-AL	2.2uF,20%,50V,GP,TP,5x11,5	1		
C139	2401-000553	C-AL	1uF,10%,50V,GP,TP,5x11,5	1		
C140	2305-000665	C-FILM,LEAD-PEF	100nF,5%,63V,TP,7.5x4.0x	1		
C141	2401-000660	C-AL	2.2uF,20%,50V,GP,TP,5x11,5	1		
C142	2401-000660	C-AL	2.2uF,20%,50V,GP,TP,5x11,5	1		
C143	2202-000222	C-CERAMIC,MLC-AXIAL	3.3nF,20%,16V,Y5P,TP	1		
C144	2202-000807	C-CERAMIC,MLC-AXIAL	22nF,+80-20%,25V,Y5V	1		
C145	2306-000134	C-FILM,LEAD-PPF	150nF,5%,400V,TP,19x17x1	1		
C146	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C147	2202-000807	C-CERAMIC,MLC-AXIAL	22nF,+80-20%,25V,Y5V	1		
C148	2305-000289	C-FILM,LEAD-PEF	220nF,5%,63V,TP,-,5mm	1		
C150	2202-000127	C-CERAMIC,MLC-AXIAL	10nF,+80-20%,25V,Y5V	1		
C202	2401-000913	C-AL	22uF,20%,16V,GP,TP,5x11,5	1		
C204	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C205	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C206	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C212	2305-000665	C-FILM,LEAD-PEF	100nF,5%,63V,TP,7.5x4.0x	1		
C218	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C219	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C301	2301-000342	C-FILM,LEAD-PEF	2.2nF,5%,50V,TP,7.4x3.9x	1		
C302	2201-000192	C-CERAMIC,DISC	0.01NF,0.25PF,500V,C0G,TP	1		
C303	2401-000360	C-AL	100uF,20%,50V,GP,TP,8x11.5,5	1		
C304	2401-000365	C-AL	100uF,20%,50V,WT,TP,10x12.5mm,	1		
C305	2305-000285	C-FILM,LEAD-PEF	220NF,5%,100V,TP,10.5X5.	1		
C306	2201-000003	C-CERAMIC,DISC	0.068NF,10%,2KV,SL,TP,7X5	1		
C312	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C313	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C401	2301-000383	C-FILM,LEAD-PEF	10nF,5%,50V,TP,6x7x3.2mm	1		
C402	2401-000302	C-AL	100uF,20%,25V,GP,TP,6.3x11,5	1		
C403	2201-000599	C-CERAMIC,DISC	0.56NF,10%,500V,Y5P,TP,5.	1		
C404	2305-000382	C-FILM,LEAD-PEF	4.7nF,5%,400V,TP,-,5mm	1		
C405	2301-001338	C-FILM,LEAD-OTHER	0.68NF,5%,1.6KV,BK,28X	1		
C406	2301-001296	C-FILM,LEAD-PPF	720NF,5%,400V,BK,26X15.5	1		
C407	2401-002268	C-AL	2.2uF,20%,250V,LZ,TP,8X11,5	1		
C408	2201-000556	C-CERAMIC,DISC	0.47NF,10%,500V,Y5P,TP,5.	1		
C409	2401-001397	C-AL	470uF,20%,25V,GP,TP,10x16,5	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
C410	2401-002288	C-AL	470uF,20%,25V,WT,TP,10x20,5	1		
C411	2201-000556	C-CERAMIC,DISC	0.47NF,10%,500V,Y5P,TP,5.	1		
C412	2401-001527	C-AL	47uF,20%,250V,HR,TP,13x25mm,5m	1		
C413	2201-000556	C-CERAMIC,DISC	0.47NF,10%,500V,Y5P,TP,5.	1		
C414	2301-001083	C-FILM,LEAD-PPF	27nF,5%,400V,TP,20x7.5x1	1		
C415	2301-001259	C-FILM,LEAD-PPF	100nF,5%,400V,TP,19x8x16	1		
C417	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C424	2201-000132	C-CERAMIC,DISC	0.1NF,10%,500V,Y5P,TP,6.5	1		
C499	2401-002267	C-AL	2.2uF,20%,250V,GP,TP,8x11.5,5	1		
C504	2301-001259	C-FILM,LEAD-PPF	100nF,5%,400V,TP,19x8x16	1		
C505	2202-000825	C-CERAMIC,MLC-AXIAL	680pF,10%,50V,Y5P,TP	1		
C506	2401-000430	C-AL	10uF,20%,250V,GP,TP,10x16mm,5m	1		
C507	2401-000430	C-AL	10uF,20%,250V,GP,TP,10x16mm,5m	1		
C508	2201-000723	C-CERAMIC,DISC	4.7NF,20%,3KV,Y5U,TP,16X5	1		
C509	2201-000723	C-CERAMIC,DISC	4.7NF,20%,3KV,Y5U,TP,16X5	1		
C511	2401-000553	C-AL	1uF,10%,50V,GP,TP,5x11,5	1		
C601	2401-001914	C-AL	1uF,20%,50V,BP,TP,5x11,5	1		
C602	2401-001914	C-AL	1uF,20%,50V,BP,TP,5x11,5	1		
C607	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C608	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C610	2301-000289	C-FILM,LEAD-PEF	5.6nF,5%,50V,TP,7x6x3,5	1		
C611	2301-000289	C-FILM,LEAD-PEF	5.6nF,5%,50V,TP,7x6x3,5	1		
C612	2401-000649	C-AL	2.2uF,20%,50V,BP,TP,5x11,5	1		
C613	2401-000649	C-AL	2.2uF,20%,50V,BP,TP,5x11,5	1		
C618	2301-000383	C-FILM,LEAD-PEF	10nF,5%,50V,TP,6x7x3.2mm	1		
C620	2305-000665	C-FILM,LEAD-PEF	100nF,5%,63V,TP,7.5x4.0x	1		
C621	2401-001998	C-AL	1000uF,20%,25V,GP,TP,10x20,5mm	1		
C623	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C624	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C627	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C629	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C638	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C642	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C643	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C644	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C701	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C702	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C703	2202-000121	C-CERAMIC,MLC-AXIAL	100pF,10%,50V,Y5P,TP	1		
C704	2202-000121	C-CERAMIC,MLC-AXIAL	100pF,10%,50V,Y5P,TP	1		
C705	2202-000121	C-CERAMIC,MLC-AXIAL	100pF,10%,50V,Y5P,TP	1		
C713	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C715	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C717	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C719	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C721	2401-000660	C-AL	2.2uF,20%,50V,GP,TP,5x11,5	1		
C722	2401-000660	C-AL	2.2uF,20%,50V,GP,TP,5x11,5	1		
C723	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C724	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C725	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C801	2301-000383	C-FILM,LEAD-PEF	10nF,5%,50V,TP,6x7x3.2mm	1		
C803	2401-000052	C-AL	220uF,20%,400V,GP,BK,30x35,10	1		
C807	2301-001342	C-FILM,LEAD-PPF	1.5nF,5%,800V,TP,15x6.5x	1		
C808	2401-003046	C-AL	47uF,20%,50V,WT,TP,6.3x11,2.5	1		
C809	2301-000111	C-FILM,LEAD-PEF	1.8nF,5%,50V,TP,6.5x3.0x	1		
C810	2301-000383	C-FILM,LEAD-PEF	10nF,5%,50V,TP,6x7x3.2mm	1		
C811	2401-002463	C-AL	470uF,20%,16V,GP,TP,8x11.5,5	1		
C812	2401-002075	C-AL	4.7uF,20%,50V,GP,TP,5x11,5	1		
C815	2401-003224	C-AL	470uF,20%,16V,WT,TP,8X11.5,5mm	1		
C817	2401-000703	C-AL	2200uF,20%,25V,GP,-,12.5x25mm,	1		
C818	2201-000556	C-CERAMIC,DISC	0.47NF,10%,500V,Y5P,TP,5.	1		
C819	2401-000703	C-AL	2200uF,20%,25V,GP,-,12.5x25mm,	1		
C820	2201-000406	C-CERAMIC,DISC	0.27NF,10%,2KV,Y5P,TP,6.3	1		
C821	2401-000262	C-AL	100uF,20%,160V,HR,TP,16x25,7.5	1		
C822	2401-000262	C-AL	100uF,20%,160V,HR,TP,16x25,7.5	1		
C823	2201-000291	C-CERAMIC,DISC	1NF,10%,500V,Y5P,TP,7.5X3	1		
C824	2305-000289	C-FILM,LEAD-PEF	220nF,5%,63V,TP,-,5mm	1		
C828	2201-000374	C-CERAMIC,DISC	0.22NF,5%,50V,C0G,TP,10.5	1		
C843	2301-000192	C-FILM,LEAD-PEF	1nF,5%,50V,TP,5.3x10mm,5	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
C844	2301-000356	C-FILM,LEAD-PEF	47nF,5%,50V,TP,7.5x4.0x6	1		
C845	2201-000599	C-CERAMIC,DISC	0.56NF,10%,500V,Y5P,TP,5.	1		
C846	2401-000698	C-AL	2200uF,20%,16V,WT,TP,12.5x25,5	1		
C888	2201-000556	C-CERAMIC,DISC	0.47NF,10%,500V,Y5P,TP,5.	1		
C901	2401-002144	C-AL	47uF,20%,16V,GP,TP,5x11,5	1		
C902	2202-000796	C-CERAMIC,MLC-AXIAL	1NF,10%,50V,Y5P,TP,3	1		
C903	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C904	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C905	2401-002463	C-AL	470uF,20%,16V,GP,TP,8x11.5,5	1		
C906	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C907	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C909	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C910	2401-001271	C-AL	4.7uF,20%,50V,GP,TP,5x11mm,5	1		
C911	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C912	2401-000480	C-AL	10uF,20%,50V,GP,TP,5x11,5	1		
C913	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C914	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C915	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C916	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C917	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C918	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C919	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C920	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C921	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C922	2401-003578	C-AL	1000uF,20%,10V,GP,TP,8x20mm,5	1		
C924	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C925	2401-000493	C-AL	10uF,20%,50V,LZ,TP,5x11mm,5mm	1		
C926	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
C927	2401-003036	C-AL	100uF,20%,16V,GP,TP,5X11mm,5mm	1		
C928	2301-000342	C-FILM,LEAD-PEF	2.2nF,5%,50V,TP,7.4x3.9x	1		
C929	2301-000445	C-FILM,LEAD-PEF	4.7nF,5%,50V,TP,5.5x7x3m	1		
C930	2401-000553	C-AL	1uF,10%,50V,GP,TP,5x11,5	1		
C931	2202-000632	C-CERAMIC,MLC-AXIAL	100nF,20%,50V,Z5U,TP	1		
CIS3	AA40-00076A	TUNER	TECC0949PG35A(S),PAL,181CH,38.	1		
CN906	3711-001084	CONNECTOR-HEADER	BOX,8P,1R,2.5MM,STRAIGH	1		
CN906	3711-003241	CONNECTOR-HEADER	BOX,14P,1R,2.5MM,STRAIG	1		
CN906	3711-002643	CONNECTOR-HEADER	BOX,4P,1R,2.5mm,STRAIGH	1		
CN906	3711-002645	CONNECTOR-HEADER	BOX,6P,1R,2.5mm,STRAIGH	1		
CN906	3711-002646	CONNECTOR-HEADER	BOX,7P,1R,2.5mm,STRAIGH	1		
CN906	3711-002647	CONNECTOR-HEADER	BOX,8P,1R,2.5mm,STRAIGH	1		
CN906	3711-003043	CONNECTOR-HEADER	BOX,4P,1R,2.5MM,STRAIGH	1		
CN909	AA37-00001A	CONNECTOR-FBT FIX PIN	JM-3500,CPTTV,0.36	1		
CN909	AA37-00001A	CONNECTOR-FBT FIX PIN	JM-3500,CPTTV,0.36	1		
⚠ CR402S	2306-000357	C-FILM,LEAD-PPF	8.2nF,5%,1.6KV,BK,20x9.5	1		
⚠ CR403S	2303-000118	C-FILM,LEAD-PPF	10nF,5%,1.6KV,BK,31x19.5	1		
⚠ CR404S	2301-001268	C-FILM,LEAD-PPF	33nF,5%,630V,TP,20x11x17	1		
⚠ CR406S	2306-000205	C-FILM,LEAD-PPF	430nF,5%,400V,BK,26x21.5	1		
⚠ CX801S	2306-000318	C-FILM,LEAD-PPF	220NF,20%,250V,BK,-,22.5	1		
⚠ CY802S	2201-000446	C-CERAMIC,DISC	3.3NF,20%,400V,Y5U,BK,15X	1		
D0254	AA32-00015A	MODULE REMOCON	FRP-3521H31,38KHZ,940MM,M	1		
D101	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D103	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D201	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D303	0402-000546	DIODE-RECTIFIER	TVR10G,400V,1.0A,DO-41,T	1		
D401	0402-000537	DIODE-RECTIFIER	RH1A,600V,0.6A,DO-204AC	1		
D402	0402-000132	DIODE-RECTIFIER	1N4004,400V,1A,DO-41,TP	1		
D403	0402-000132	DIODE-RECTIFIER	1N4004,400V,1A,DO-41,TP	1		
D404	0402-001599	DIODE-RECTIFIER	DGP30L,1500,3A,DO-201AD(	1		
D405	0402-000534	DIODE-RECTIFIER	RG10V,400V,1.2A,DO-201,T	1		
D406	0402-000540	DIODE-RECTIFIER	RU20A,600V,1.5A,-,TP	1		
D407	0402-000540	DIODE-RECTIFIER	RU20A,600V,1.5A,-,TP	1		
D408	0402-001295	DIODE-RECTIFIER	GUR460L-5700,600V,4A,DO-	1		
D409	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D501	0402-000006	DIODE-RECTIFIER	1N4007GP,1KV,1A,DO-41,TP	1		
D502	0402-000006	DIODE-RECTIFIER	1N4007GP,1KV,1A,DO-41,TP	1		
D503	0402-000006	DIODE-RECTIFIER	1N4007GP,1KV,1A,DO-41,TP	1		
D504	0402-000006	DIODE-RECTIFIER	1N4007GP,1KV,1A,DO-41,TP	1		
D510	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
D511	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D512	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D513	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D606	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D630	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
⚠ D801S	0402-001477	DIODE-BRIDGE	GSIB460,600V,4A,SIP-4,ST	1		
D803	0402-000546	DIODE-RECTIFIER	TVR10G,400V,1.0A,DO-41,T	1		
D804	0401-000006	DIODE-SWITCHING	BAV21,250V,200MA,DO-35,T	1		
D805	0401-000006	DIODE-SWITCHING	BAV21,250V,200MA,DO-35,T	1		
D807	0402-001604	DIODE-RECTIFIER	MUR420,200V,4A,DO-201AD,	1		
D808	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
D809A	AA96-00243D	ASSY HEAT SINK P	-,BRIDGE,AA62-00045A,D0	1	S.N.A	
D811	0402-001603	DIODE-RECTIFIER	MUR480E,800V,4A,DO-201AD	1		
D813	0402-000493	DIODE-RECTIFIER	1R5GU41,400V,1.5A,DO-15L	1		
DZ242	0403-001373	DIODE-ZENER	MTZJ5.1A,4.85-5.03V,500MW,D0	1		
DZ301	0403-001329	DIODE-ZENER	MTZJ24B,22.75-23.73V,500MW,D	1		
DZ302	0403-001329	DIODE-ZENER	MTZJ24B,22.75-23.73V,500MW,D	1		
DZ303	0403-001221	DIODE-ZENER	UZ39BSB,35.36-37.19V,500MW,D	1		
DZ305	0403-001329	DIODE-ZENER	MTZJ24B,22.75-23.73V,500MW,D	1		
DZ306	0403-000700	DIODE-ZENER	TZP33A,5%,1000MW,DO-41,TP	1		
DZ403	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
DZ501	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ502	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ503	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ510	0403-000716	DIODE-ZENER	MTZJ4.7B,4.59-4.77V,500MW,DO	1		
DZ605	0403-000714	DIODE-ZENER	MTZJ3.3B,3.32-3.53V,500MW,DO	1		
DZ701	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ702	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ703	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ704	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ802	0403-000717	DIODE-ZENER	MTZJ5.1B,4.94-5.2V,500mW,DO-	1		
DZ807	0403-000718	DIODE-ZENER	MTZJ6.8B,6.52-6.79V,500mW,DO	1		
DZ810	0403-000508	DIODE-ZENER	MTZJ5.6B,5.45-5.73V,500MW,DO	1		
DZ811	0403-000700	DIODE-ZENER	TZP33A,5%,1000MW,DO-41,TP	1		
DZ812	0403-000700	DIODE-ZENER	TZP33A,5%,1000MW,DO-41,TP	1		
DZ813	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ814	0403-001320	DIODE-ZENER	MTZJ6.2C,6.16-6.4V,500MW,DO-	1		
DZ815	0403-001321	DIODE-ZENER	MTZJ6.8C,6.7-6.97V,500MW,DO-	1		
DZ816	0401-000005	DIODE-SWITCHING	1N4148,75V,150MA,DO-35,T	1		
DZ818	0403-000720	DIODE-ZENER	MTZJ9.1B,8.57-9.01V,500MW,DO	1		
DZ819	0403-000714	DIODE-ZENER	MTZJ3.3B,3.32-3.53V,500MW,DO	1		
DZ901	0403-000719	DIODE-ZENER	MTZJ7.5B,7.11-7.44V,500MW,DO	1		
DZ905	0403-001317	DIODE-ZENER	MTZJ3.0B,3.01-3.22V,500MW,DO	1		
EL501	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL502	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL800	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL801	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL803	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL804	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL805	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL806	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL807	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL808	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EL809	6042-000001	EYELET	ID2.2,OD2.7,L3.1,NI+SN,BSP3-1/	1	S.N.A	
EY600	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY601	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY602	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY603	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY800	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY801	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY808	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY809	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY810	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY811	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY812	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY813	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY814	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY815	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
EY816	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY817	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY818	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY819	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY820	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY821	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY823	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY824	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY825	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY826	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY827	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY828	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY829	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY830	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY831	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY832	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY833	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY834	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY835	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY836	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY837	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY838	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY839	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY840	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY841	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY842	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY843	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY844	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY845	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY846	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY847	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY848	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY849	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY850	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY851	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY852	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY853	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY854	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY855	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY856	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY858	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY859	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY860	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY861	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY863	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY864	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY865	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY866	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY867	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY869	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY870	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY871	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY872	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY873	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY874	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY875	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY876	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY878	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY879	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY880	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY881	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY882	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY883	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY887	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY890	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY893	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY898	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY899	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
EY982	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
EY983	6042-000002	EYELET	ID1.5,OD2,L2.8,NI+SN,BSP3-1/2H	1	S.N.A	
F101	2901-000297	FILTER-EMI ON BOARD	-,3A,-,-,3.5x5,TP,-	1		
F101	2901-000297	FILTER-EMI ON BOARD	-,3A,-,-,3.5x5,TP,-	1		
F101	2901-000297	FILTER-EMI ON BOARD	-,3A,-,-,3.5x5,TP,-	1		
F101	2901-000297	FILTER-EMI ON BOARD	-,3A,-,-,3.5x5,TP,-	1		
F801A	3602-000114	FUSE-HOLDER	-,-,30mohm	1		
F801B	3602-000114	FUSE-HOLDER	-,-,30mohm	1		
FD801A	3601-001228	FUSE-AXIAL LEAD	125V,10A,FAST-ACTING,EPO	1		
FD802	3601-000281	FUSE-CARTRIDGE	250V,4A,TIME-LAG,GLASS,5.	1		
⚠ FD802S	3601-001163	FUSE-AXIAL LEAD	125V,7A,-,EPOXY,2.4X7.1M	1		
GT301	AA60-40012F	PIN-GT	4P,2.36PI,6/12/14mm,NYLON66,LO	1	S.N.A	
GT801	AA60-40012G	PIN-GT	3P,2.36PI,10/5mm,NYLON66,LOCKI	1	S.N.A	
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
GT811	AA60-40014A	PIN-GT,ASSY	AUTO	1		
H/S	0502-001264	TR-POWER	2SC5936,NPN,40000mW,TOP-3E,ST,	1		
IC012	1203-001217	IC-POSI.ADJUST REG.	431,TO-92,3P,4.58MIL	1		
IC063	AA13-00116A	IC HYBRID	STR-W6750F,6,-20 to +115,TO-3P	1		
IC063	AA13-20004W	IC HYBRID	-,PAP103T,SIP,6P,PRE-AMP,TP	1		
IC112	1103-001211	IC-EEPROM	24C16,2Kx8Bit,DIP,8P,10.16x7.1	1		
IC301	AA96-00623F	ASSY HEAT SINK P	LA78045,SCREW,AA62-0005	1	S.N.A	
IC501	AA96-50311N	ASSY HEAT SINK P	AA62-30175D,TDA6109JF,S	1	S.N.A	
IC602	AA96-02124A	ASSY HEAT SINK P	AA62-30182G,SCREW,TDA72	1	S.N.A	
⚠ IC801S	AA96-50373P	ASSY HEAT SINK P	AA62-30181K,STR-W6750F,	1	S.N.A	
IC802	AA96-00243Q	ASSY H/S	SCREW,AA62-00045A,1203-001944,	1	S.N.A	
IC803	AA96-00243R	ASSY HEAT SINK P	AA62-00045A,KA78R08,TVD	1	S.N.A	
IC804	AA96-00243K	ASSY HEAT SINK P	-,REGULATOR,AA62-000450	1	S.N.A	
JA701	3722-000195	JACK-SCART	42P,-,SN,BLK,NO	1		
L101	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L102	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L103	2701-000202	INDUCTOR-AXIAL	0.56UH,10%,2534	1		
L106	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L107	2701-000159	INDUCTOR-AXIAL	22UH,10%,4298	1		
L110	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
L199	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
L201	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L202	2001-000793	R-CARBON	47OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
L204	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L303B	2701-001040	INDUCTOR-AXIAL	10UH,10%,4514	1		
L424	2701-000142	INDUCTOR-AXIAL	1UH,10%,2534	1		
L503	2702-001092	INDUCTOR-RADIAL	2.2uH,10%,6x4mm	1		
L607	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L608	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L701	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L702	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L703	2701-000142	INDUCTOR-AXIAL	1UH,10%,2534	1		
L704	2701-000142	INDUCTOR-AXIAL	1UH,10%,2534	1		
L705	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L706	2701-000180	INDUCTOR-AXIAL	33UH,5%,2534	1		
L707	2701-000142	INDUCTOR-AXIAL	1UH,10%,2534	1		
L808	2701-001030	INDUCTOR-AXIAL	43UH,10%,4514	1		
L901	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
L902	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L903	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L906	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L907	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L908	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L909	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L910	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L911	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
LD901	AA96-00555A	ASSY LED GUIDE	-,-,UEX-LD-030,GREEN	1	S.N.A	
LX085	AA27-90001B	COIL-SPARK,GAP	S-23,1.5KV,-,-,-,-,-,-,-,	1		
LX085	AA27-90001B	COIL-SPARK,GAP	S-23,1.5KV,-,-,-,-,-,-,-,	1		
LX085	AA27-90001B	COIL-SPARK,GAP	S-23,1.5KV,-,-,-,-,-,-,-,	1		
⚠ LX801S	AA29-00015A	FILTER LINE NOISE	WS32W8,28-20MH 1.5A,+-	1		
M0014	AA97-16155A	ASSY AUTO-MAIN	CW29M164N2XXEC,S16A,AK,EL	1	S.N.A	
M0018	AA97-16112A	ASSY MICOM	,S16B,GREEN3,TDA12025PQ/N1F80	1		
M0081	6003-000334	SCREW-TAPTITE	RH,+,2S,M3,L6,ZPC(YEL),SWR	1	S.N.A	
M0081	6003-000334	SCREW-TAPTITE	RH,+,2S,M3,L6,ZPC(YEL),SWR	1	S.N.A	
M0081	6003-000335	SCREW-TAPTITE	RH,+,2S,M3,L8,ZPC(YEL),SWR	1	S.N.A	
M0081	6003-000333	SCREW-TAPTITE	RH,+,2S,M3,L10,ZPC(YEL),SW	1	S.N.A	
M0081	6003-000334	SCREW-TAPTITE	RH,+,2S,M3,L6,ZPC(YEL),SWR	1	S.N.A	
M0081	6003-000333	SCREW-TAPTITE	RH,+,2S,M3,L10,ZPC(YEL),SW	1	S.N.A	
M0081	6003-000333	SCREW-TAPTITE	RH,+,2S,M3,L10,ZPC(YEL),SW	1	S.N.A	
M0081	6003-000333	SCREW-TAPTITE	RH,+,2S,M3,L10,ZPC(YEL),SW	1	S.N.A	
M0081	6003-000334	SCREW-TAPTITE	RH,+,2S,M3,L6,ZPC(YEL),SWR	1	S.N.A	
M0081	6003-000333	SCREW-TAPTITE	RH,+,2S,M3,L10,ZPC(YEL),SW	1	S.N.A	
M2893	AA39-00376B	LEAD CONNECTOR	ET-PAL CIS,UL1007/2547#26	1		
P803T	1404-001264	THERMISTOR-PTC	4.5OHM,+30/-20%,220V,290V	1		
⚠ PC801S	0604-001032	PHOTO-COUPLER	TR,170-260%,300mW,DIP-4,ST	1		
Q102	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q207	0501-000283	TR-SMALL SIGNAL	KSA539,PNP,400mW,TO-92,T	1		
Q261	0501-000283	TR-SMALL SIGNAL	KSA539,PNP,400mW,TO-92,T	1		
Q262	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q272	0501-000283	TR-SMALL SIGNAL	KSA539,PNP,400mW,TO-92,T	1		
Q273	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q401	AA96-00624J	ASSY HEAT SINK P	SCREW,AA62-00057A,C5936	1	S.N.A	
Q402	0501-000369	TR-SMALL SIGNAL	KSC2331-Y,NPN,1000mW,TO-	1		
Q404	AA96-00624G	ASSY HEAT SINK P	SCREW,AA62-00057B,FQP63	1	S.N.A	
Q409	0505-001309	FET-SILICON	IRF630,N,200V,10A,0.4OHM,100	1		
Q501	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q502	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q802	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q805	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q806	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q902	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
Q903	0501-000283	TR-SMALL SIGNAL	KSA539,PNP,400mW,TO-92,T	1		
Q904	0501-000283	TR-SMALL SIGNAL	KSA539,PNP,400mW,TO-92,T	1		
Q905	0501-000389	TR-SMALL SIGNAL	KSC815,NPN,400mW,TO-92,T	1		
R101	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R102	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R104	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R106	2001-000947	R-CARBON	7.5KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R107	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R108	2001-000331	R-CARBON	12KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R109	2001-000786	R-CARBON	47KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R111	2001-000780	R-CARBON	470OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R123	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R124	2001-000515	R-CARBON	220OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R126	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R129	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R130	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R163	2001-000005	R-CARBON	390ohm,5%,1/8W,AA,TP,1.8x3.2mm	1		
R164	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R165	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R167	2001-000924	R-CARBON	680OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R169	2004-001914	R-METAL	39Kohm,2%,1/8W,AA,TP,1.8x3.5mm	1		
R201	2001-000515	R-CARBON	220OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R205	2001-000613	R-CARBON	3.9KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R210	2001-000878	R-CARBON	6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
R211	2001-000857	R-CARBON	560OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R213	2001-000908	R-CARBON	62KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R215	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R216	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R217	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R218	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R262	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R263	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R264	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R271	2001-000938	R-CARBON	68OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R276	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R300	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R301	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R302	2004-001970	R-METAL(S)	1.8Kohm,1%,1/2W,AA,TP,6.5x2.5	1		
R303	2008-001076	R-FUSIBLE(S)	1.8ohm,5%,2W,AF,TP,3.9x10mm	1		
R304	2008-001076	R-FUSIBLE(S)	1.8ohm,5%,2W,AF,TP,3.9x10mm	1		
R305	2004-001970	R-METAL(S)	1.8Kohm,1%,1/2W,AA,TP,6.5x2.5	1		
R306	2001-000016	R-CARBON(S)	1OHM,5%,1/2W,AA,TP,2.4X6.4MM	1		
R307	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R309	2003-002205	R-METAL OXIDE(S)	330ohm,5%,2W,AG,TP,3.9X	1		
R310	2003-002205	R-METAL OXIDE(S)	330ohm,5%,2W,AG,TP,3.9X	1		
R311	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R401	2001-001116	R-CARBON(S)	27OHM,5%,1/2W,AA,TP,2.4X6.4M	1		
R402	2001-001070	R-CARBON(S)	120OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R404	2001-001114	R-CARBON(S)	270OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R405	2001-000022	R-CARBON(S)	33OHM,5%,1/2W,AA,TP,2.4X6.4M	1		
R406	2001-000028	R-CARBON(S)	100OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R407	2003-002151	R-METAL OXIDE	18KOHM,5%,2W,AG,TP,6X16MM	1		
R408	2004-001390	R-METAL(S)	1Kohm,2%,1/2W,AA,TP,2.4x6.4mm	1		
R409	2004-001402	R-METAL(S)	6.8Kohm,1%,1/2W,AA,TP,2.4x6.4	1		
R410	2004-004015	R-METAL(S)	9.1Kohm,1%,1/2W,AA,TP,2.5x6.5	1		
R411	2001-001152	R-CARBON(S)	47KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R413	2008-000253	R-FUSIBLE(S)	0.47ohm,5%,1W,AF,TP,3.9x10m	1		
R414	2008-000264	R-FUSIBLE(S)	1ohm,5%,1W,AF,TP,3.9x10mm	1		
R418	2008-001031	R-FUSIBLE(S)	1.8ohm,5%,1W,AF,TP,3.9x10mm	1		
R419	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R422	2001-000331	R-CARBON	12KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R423	2003-001042	R-METAL OXIDE(S)	5.6Kohm,5%,2W,AF,TP,3.9	1		
R424	2001-000012	R-CARBON	680KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R425	2004-000433	R-METAL	1Kohm,1%,1/8W,AA,TP,1.8x3.2mm	1		
R426	2003-000540	R-METAL OXIDE(S)	1Kohm,5%,2W,AF,TP,4x12m	1		
R427	2001-000786	R-CARBON	47KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R428	2001-000258	R-CARBON	1.8KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R429	2001-000563	R-CARBON	27KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R450	2008-001135	R-FUSIBLE(S)	3.9ohm,5%,1W,AF,TP,3.9x10mm	1		
R501	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R501H	2002-001017	R-COMPOSITION	1Kohm,10%,1/2W,AA,TP,3.7x9	1		
R502H	2002-001017	R-COMPOSITION	1Kohm,10%,1/2W,AA,TP,3.7x9	1		
R504	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R505	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R511	2002-001017	R-COMPOSITION	1Kohm,10%,1/2W,AA,TP,3.7x9	1		
R514	2001-001062	R-CARBON(S)	10MOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R516	2008-000251	R-FUSIBLE(S)	0.27ohm,5%,2W,AF,TP,3.9x10m	1		
R520	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R521	2001-000679	R-CARBON	36KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R522	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R523	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R551	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R606	2001-000837	R-CARBON	51KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R607	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R608	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R609	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R620	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R621	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R622	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R623	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R701	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R702	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
R703	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R704	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R705	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R706	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R707	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R708	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R709	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R710	2001-000938	R-CARBON	68OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R711	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R712	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R713	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R715	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R716	2001-000290	R-CARBON	10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R717	2001-000702	R-CARBON	39KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R718	2001-000702	R-CARBON	39KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R719	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R720	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R721	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R722	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R726	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R727	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R728	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R729	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R730	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R802	2003-000586	R-METAL OXIDE(S)	22Kohm,5%,2W,AF,TP,4x12	1		
R803	2003-000586	R-METAL OXIDE(S)	22Kohm,5%,2W,AF,TP,4x12	1		
R804	2003-000586	R-METAL OXIDE(S)	22Kohm,5%,2W,AF,TP,4x12	1		
R805	2001-001088	R-CARBON(S)	1KOHM,5%,1/2W,AA,TP,2.4X6.4M	1		
R807	2001-000037	R-CARBON(S)	330OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R808	2001-001150	R-CARBON(S)	470KOHM,5%,1/2W,AA,TP,2.4X6.	1		
R809	2001-001150	R-CARBON(S)	470KOHM,5%,1/2W,AA,TP,2.4X6.	1		
R810	2001-001097	R-CARBON(S)	2.4KOHM,5%,1/2W,AA,TP,2.4X6.	1		
R814	2005-000002	R-WIRE WOUND,NON	0.27ohm,5%,1W,AA,TP,3.3	1		
R815	2008-000266	R-FUSIBLE(S)	1ohm,5%,2W,AF,TP,3.9x10mm	1		
R816	2004-001891	R-METAL(S)	133Kohm,1%,1/2W,AA,TP,2.5x6.5	1		
R817	2001-001088	R-CARBON(S)	1KOHM,5%,1/2W,AA,TP,2.4X6.4M	1		
R818	2001-001131	R-CARBON(S)	33KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R819	2004-001983	R-METAL(S)	2.49Kohm,1%,1/2W,AA,TP,2.4x6.	1		
R820	2001-001088	R-CARBON(S)	1KOHM,5%,1/2W,AA,TP,2.4X6.4M	1		
R821	2004-004089	R-METAL(S)	123Kohm,1%,1/2W,AA,TP,2.5x6.5	1		
R823	2003-002020	R-METAL OXIDE(S)	56Kohm,5%,2W,AF,TP,3.9x	1		
R825	2008-001049	R-FUSIBLE(S)	3.9ohm,5%,2W,AF,TP,3.9x10mm	1		
R826	2008-001049	R-FUSIBLE(S)	3.9ohm,5%,2W,AF,TP,3.9x10mm	1		
R827	2008-001011	R-FUSIBLE(S)	0.18ohm,10%,2W,AF,TP,3.9x10	1		
R828	2008-001049	R-FUSIBLE(S)	3.9ohm,5%,2W,AF,TP,3.9x10mm	1		
R829	2001-001078	R-CARBON(S)	15KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R830	2001-001078	R-CARBON(S)	15KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R831	2001-001078	R-CARBON(S)	15KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R832	2001-000028	R-CARBON(S)	100OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R833	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R836	2001-001138	R-CARBON(S)	390OHM,5%,1/2W,AA,TP,2.4X6.4	1		
R841	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R895	2001-001152	R-CARBON(S)	47KOHM,5%,1/2W,AA,TP,2.4X6.4	1		
R901	2001-000440	R-CARBON	1OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R902	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R903	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R905	2001-000008	R-CARBON	15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R906	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R907	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R908	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R909	2001-000007	R-CARBON	3KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R910	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R911	2001-000347	R-CARBON	13KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R913	2001-000429	R-CARBON	1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R914	2001-000241	R-CARBON	1.5KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R915	2001-000007	R-CARBON	3KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R916	2001-000812	R-CARBON	5.6KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R917	2001-000347	R-CARBON	13KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
R920	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R921	2001-000734	R-CARBON	4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R923	2001-000786	R-CARBON	47KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R924	2001-000591	R-CARBON	3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R925	2001-000440	R-CARBON	1OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R926	2001-000591	R-CARBON	3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	1		
R928	2001-000302	R-CARBON	10OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R929	2001-000008	R-CARBON	15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R932	2001-000786	R-CARBON	47KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R933	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R934	2001-000924	R-CARBON	680OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R935	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R936	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R939	2001-000522	R-CARBON	22KOHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R940	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R941	2001-000281	R-CARBON	100OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
RL801	3501-001053	RELAY-POWER	5VDC,530MW,10000MA,1FORMA,15	1		
⚠ RX801S	2002-001011	R-COMPOSITION	3.3Mohm,5%,1/2W,AA,TP,3.7x	1		
⚠ RY801S	2002-001012	R-COMPOSITION	8.2Mohm,5%,1/2W,AA,TP,3.7x	1		
SF101	2904-000302	FILTER-SAW AV	38.9MHz,SIP5K,ST,15.4dB,B/	1		
SF102	2904-001203	FILTER-SAW AV	38.9MHz,SIP5K,ST,16.9dB,B/	1		
⚠ SW801S	3403-001134	SWITCH-PUSH	250V,5A,DPST,ON-OFF,-	1		
SW901	3404-001252	SWITCH-TACT	12VDC,50MA,130GF,7.5X7.1,1	1		
SW902	3404-001252	SWITCH-TACT	12VDC,50MA,130GF,7.5X7.1,1	1		
SW903	3404-001252	SWITCH-TACT	12VDC,50MA,130GF,7.5X7.1,1	1		
SW904	3404-001252	SWITCH-TACT	12VDC,50MA,130GF,7.5X7.1,1	1		
SW905	3404-001252	SWITCH-TACT	12VDC,50MA,130GF,7.5X7.1,1	1		
T0010	AA27-00057A	COIL CHOKE	-,10mH,YL-9N 15x27.5 C:9.5,0.	1		
T0010	AA27-00116A	COIL CHOKE	CODE_NO,-,35mH,-0, +5%,-,2.8O	1		
T0010	AA27-00067A	COIL CHOKE	-,240uH,YL9N 12x20 C:6.0,0.12	1		
T0010	AA27-00103A	COIL CHOKE	600UH,-,600UH,+-10%,600UH,0.5	1		
T0066	AA62-30182G	HEAT SINK-ES	CT-29A20HR,A6063S,T2.0,26.2	1	S.N.A	
T0066	AA62-30181V	HEAT SINK-ES	CT-29M16V,AL6063,T2.0,64,40	1	S.N.A	
T0074	1201-002114	IC-VIDEO AMP	TDA6109JF,SDIP,9P,18.5mm,-,	1		
T0077	AA41-01127A	PCB MAIN	CS29M20,FR-1,1L,00,1.6T,245*33	1	S.N.A	
T0085	1201-002118	IC-AUDIO AMP	TDA7297SA,ZIP,15P,-,DUAL,32	1		
T0087	1203-001006	IC-POSI.FIXED REG.	78R05,TO-220F,4P,-,PL	1		
T0087	1203-001944	IC-POSI.FIXED REG.	78RM33,TO-220,3P,-,PL	1		
T0087	1203-001697	IC-POSI.FIXED REG.	78R08,TO-220,4P,-,PLA	1		
T0088	1204-002183	IC-VERTICAL PROCESSO	LA78045,TO220,7P,15	1		
T0105	AA60-30001A	WASHER-PLATE	M3,ID3.5,15X8.5,T1.0,SBHG	1	S.N.A	
T0175	AA62-00065A	HEAT SINK-PS	DP,-,-,-,AA62-00045A,-,-,-	1	S.N.A	
T0175	AA62-00065A	HEAT SINK-PS	DP,-,-,-,AA62-00045A,-,-,-	1	S.N.A	
T0175	AA62-00065A	HEAT SINK-PS	DP,-,-,-,AA62-00045A,-,-,-	1	S.N.A	
T0175	AA62-00065A	HEAT SINK-PS	DP,-,-,-,AA62-00045A,-,-,-	1	S.N.A	
T0175	AA62-00056A	HEAT SINK-PS	-,-,T1.0,-,41*35*70,D2,-,-	1	S.N.A	
T0175	AA62-00057B	HEAT SINK-PS	CT-29K12P,A1050S,1.0,41,60,	1	S.N.A	
T0175	AA62-00057A	HEAT SINK-PS	-,-,T1.0,-,41*20*60,D2,-,-	1	S.N.A	
T0175	AA62-30175D	HEAT SINK-PS	-,SECC,T1.0,-,33X15X30 FT-2	1	S.N.A	
T0245	0202-001366	SOLDER-WIRE FLUX	-,RS60S,D1.2,63Sn/37Pb,	0.25	S.N.A	
T0296	AA27-00076A	COIL LINEARITY	-,33uH,DR14x15,11mm,19x32	1		
T0310	4715-001036	SURGE ABSORBER	500V,20%,-,-,TP	1	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.09	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.09	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.09	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.1	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.1	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.2	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.2	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.2	S.N.A	
T0522	0205-001153	GREASE-SILICON	SC102,JAPAN,-	0.2	S.N.A	
T0607	AA61-01390A	BRACKET-IC	CT-29A20HR,SECC,T1.0	1	S.N.A	
T0900	1404-001045	THERMISTOR-NTC	4.7ohm,15%,2900K,35.0mW,T	1		
T401	AA26-50001R	TRANS-HORIZ.DRIVE	-,-,-,80MH,-,-,520UH,-	1		
⚠ T444S	AA26-00145A	TRANS FBT	1372.0076B,CT29A5P,3.5MH,135V	1		
⚠ T801S	AA26-00228A	TRANS SWITCHING	EER4245,CS29M6,300V,220V	1		
⚠ V999S	3704-001197	SOCKET-CRT	8P+SEN,29PI,22.5PI,NI+SN,-	1		
VP801	1405-000152	VARISTOR	560V,2500A,14x8.5mm,TP	1		

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
⚠ VX801S	1405-000187	VARISTOR	750V,1250A,12.5x7mm,TP	1		
X201	2801-003316	CRYSTAL-UNIT	24.576MHz,30ppm,28-AAM,20pF	1		
	0402-001374	DIODE-RECTIFIER	FFPF06U20S,200V,6A,TO-22	1		
	AA96-03764A	ASSY PCB P-A/V	AA94-14077F	1	S.N.A	
C701	2202-000121	C-CERAMIC,MLC-AXIAL	100pF,10%,50V,Y5P,TP	1		
C702	2202-000121	C-CERAMIC,MLC-AXIAL	100pF,10%,50V,Y5P,TP	1		
C707	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
C708	2202-000231	C-CERAMIC,MLC-AXIAL	0.33NF,10%,50V,Y5P,T	1		
JA701	3722-001031	JACK-PIN	3P,3.6mm,#18,AU	1		
JS701	3722-001163	JACK-VHS	4P,AU,BLK,ANGLE	1		
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L2514	3301-000287	BEAD-AXIAL	,3.5x1.0x6.0mm,3000mA,TP,,,50	1	S.N.A	
L701	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L702	2701-000114	INDUCTOR-AXIAL	10UH,10%,2534	1		
L705	2701-000168	INDUCTOR-AXIAL	3.3UH,5%,2534	1		
L706	2701-000168	INDUCTOR-AXIAL	3.3UH,5%,2534	1		
R703	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
R704	2001-000969	R-CARBON	75OHM,5%,1/8W,AA,TP,1.8X3.2MM	1		
T0091	AA41-00345A	PCB-SIDE A/V	CS29K1,FR-1,1L,A,1.6T,245x2	1	S.N.A	
T0238	AA97-16314A	ASSY AUTO	AA97-14571A	1	S.N.A	
T0245	0202-001366	SOLDER-WIRE FLUX	-,RS60S,D1.2,63Sn/37Pb,	0.01	S.N.A	
T0245	AA39-20068E	LEAD CONNECTOR-ASSY	,8P,500,YBNH025-08,6	1		
T0245	AA39-20070F	LEAD CONNECTOR-ASSY	,7P,500,YBNH025-07,6	1		
T0603	AA63-10002A	BAND-TIE	NYLON66 V2,L100,NTR	1	S.N.A	

ASSY PACKING

	AA90-03236A	ASSY PACKING	29M6	1	S.N.A	
T0524	6902-000006	BAG PE	HDPE/NITRON/HDPE,T0.02/T0.5/T0	1	S.N.A	
T0214	AA60-40006A	PIN-STAPLE	AUTO,33X17.8X2.4,H18,33X17.8X	24	S.N.A	
	HA83-00058A	LP-RESIN-EPS	,CHEIL SF-301V,WHT	0.77	S.N.A	
	HA83-00046A	LP-TAPE INK	,WIDTH 105 MM	0.22	S.N.A	

ASSY COVER FRONT

M0001	AA90-04971A	ASSY COVER FRONT	29M06,KS3A	1	S.N.A	
T0081	6002-000515	SCREW-TAPPING	RH,+,2,M4,L15,ZPC(WHT),SWR	7		
M0081	6003-001268	SCREW-TAPTITE	TH,+,B,M4,L12,ZPC(YEL),SWR	2	S.N.A	
CRT+CF	AA60-10050V	BOLT-HEX	-,SWRCH18A,M6,L30,HH,+,WC,-,Z	4	S.N.A	
CIS1	AA65-30110A	CLAMPER CORE-WIRE	ALL MODEL,NYLON 66,V2,	1	S.N.A	
	AA81-00129A	A/S-TAPE-INK	ALL,BLK,W100MM	0.055	S.N.A	
T0003	AA96-02034A	ASSY C P-FRONT	29M06,HIPS,HB,KS3A,SV	1		
T0082	3001-001092	SPEAKER	10W,8OHM,87DB,150HZ	2		
M0081	6003-001019	SCREW-TAPTITE	RH,+,B,M4,L12,ZPC(BLK),SWR	8	S.N.A	
M0081	6003-001019	SCREW-TAPTITE	RH,+,B,M4,L12,ZPC(BLK),SWR	1	S.N.A	
M0081	6003-001019	SCREW-TAPTITE	RH,+,B,M4,L12,ZPC(BLK),SWR	1	S.N.A	
T0245	AA39-00102A	LEAD CONNECTOR-ASSY	,4P,900,700MM,35155-	1		
CIS7	AA61-60003J	SPRING ETC-CS	-,SUS304,-,-,OD6,N7,OD6,-,	1	S.N.A	
T0003	AA64-04007A	CABINET FRONT	29M06,HIPS,HB,SV012P,SEH,K	1	S.N.A	
	AA81-00106A	A/S-MARKING PAINT	,P432U,DARK GREY,TPC	0.08	S.N.A	
T0091	HA83-00006A	LP-RESIN HIPS	,BASF495F,NTR,HB	2.361	S.N.A	
T0084	HA83-00011A	LP-RESIN	,M BATCH,WILSON 6007-GY-60,GRY	0.048	S.N.A	
	HA83-00040B	LP-MARKING PAINT	,METALLIC SILVER,SV-012	0.145	S.N.A	
T0022	AA64-04011A	KNOB CONTROL	M06,HIPS,HB,SV012P,ALL,SEH	1	S.N.A	
T0091	HA83-00006A	LP-RESIN HIPS	,BASF495F,NTR,HB	0.001	S.N.A	
T0084	HA83-00011A	LP-RESIN	,M BATCH,WILSON 6007-GY-60,GRY	0.001	S.N.A	
	HA83-00040B	LP-MARKING PAINT	,METALLIC SILVER,SV-012	0.001	S.N.A	
T0023	AA64-04012A	KNOB POWER	M06,HIPS,HB,SV012P,ALL,SEH	1	S.N.A	
T0091	HA83-00006A	LP-RESIN HIPS	,BASF495F,NTR,HB	2.16	S.N.A	
T0084	HA83-00011A	LP-RESIN	,M BATCH,WILSON 6007-GY-60,GRY	0.04	S.N.A	
	HA83-00040B	LP-MARKING PAINT	,METALLIC SILVER,SV-012	0.001	S.N.A	
T0299	AA64-04013A	WINDOW-RMC,LED	M06,ACRYL,HB,CLEAR,SEH	1	S.N.A	

Loc.No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
T0084	HA83-00010A	LP-RESIN	,OROGLAS,VM-100 ZHN 2	0.001	S.N.A	
T0057	AA64-70117B	BADGE-BRAND	,AL,T1.5,10.6,L65,BLK,SILVER	1		
CIS1	AA65-30105A	CLAMPER CORE-WIRE	ALL MODEL,NYLON 66,V2,	1	S.N.A	
T0245	HA61-00711C	HOLDER-PCB	29K8,HIPS,HB,GRY	1	S.N.A	
T0091	HA83-00006A	LP-RESIN HIPS	,BASF495F,NTR,HB	24.8	S.N.A	
T0084	HA83-00011A	LP-RESIN	,M BATCH,WILSON 6007-GY-60,GRY	0.5	S.N.A	
	HA83-00049A	LP-ADHESIVE-HM	12MM,NTR	0.28	S.N.A	
qms	HA83-00052A	LP-TAPE-INK	,WIDTH 55 MM	0.032	S.N.A	
T0603	AA63-10002A	BAND-TIE	NYLON66 V2,L100,NTR	2	S.N.A	
M0081	6003-001019	SCREW-TAPTITE	RH,+,B,M4,L12,ZPC(BLK),SWR	1	S.N.A	

ASSY COVER REAR

M0002	AA90-04980A	ASSY COVER REAR	29M06,SEH	1	S.N.A	
T0066	AA64-00894L	INLAY-BACK	21K2,PS SHEET,T0.3,BLK,KS1B 2	1	S.N.A	
T0015	AA64-04015A	CABINET BACK	29M06,HIPS,HB	1		
T0098	AA81-00096A	RESIN-A	VL-1823,G5433,A	,253.020	S.N.A	
T0522	AA65-30008A	CLAMPER CORE-CORD	-,PE,HB,-,BLK,-	1	S.N.A	
T0016	AA65-30109A	CLAMPER CORE-FBT	-,NYLON-66,V2,-,BLK,-	1	S.N.A	

ASSY FIXING

T0892	AA91-09259A	ASSY FIXING	CP2/NO(4.0),H/C300,S16B	1	S.N.A	
⚠ T0268	AA39-10001G	CBF-POWER CORD	-,KKP-419C,KLCE-2F,2.286m	1		
CIS1	AA65-30018A	CLAMPER CORE-WIRE	DONG-A,NYLON-66,-,-,-,	2	S.N.A	
CIS1	AA65-30111A	CLAMPER CORE-WIRE	ALL MODEL,NYLON,V0,-,W	1	S.N.A	

ASSY CPT

T0521	AA91-09484A	ASSY CPT	CW29M164N2XXEC,29,SDIHU,AK	1	S.N.A	
⚠ T0063	AA03-00420A	CRT COLOR	A68QFN793X001,+380,1.09,20.0,1	1		
T0089	AA27-00318A	COIL DEGAUSSING	29,TXN2798HFX,10%,50T,4	1		
T0603	AA98-70010B	ASSY TBC WIRE P	KS3A/CW29A6VN,29,NTSC,2P	1	S.N.A	
T0603	AA63-10002A	BAND-TIE	NYLON66 V2,L100,NTR	1	S.N.A	
T0527	AA61-01373C	HOLDER-D COIL	NYLON,W31MM,WHT,SEH	4	S.N.A	

ASSY ACCESSORY

M0045	AA92-11122A	ASSY ACCESSORY	CW21A113N2XXEC,S16A,GREEN	1	S.N.A	
T0074	AA59-00312J	REMOCON	S16A,TM75,TTX,47,G6148,EX,PAL,	1		
	HA83-00047A	LP-TAPEACETATE	T0.1MM,W20MM,L200MM	0.065	S.N.A	

6. Troubleshooting

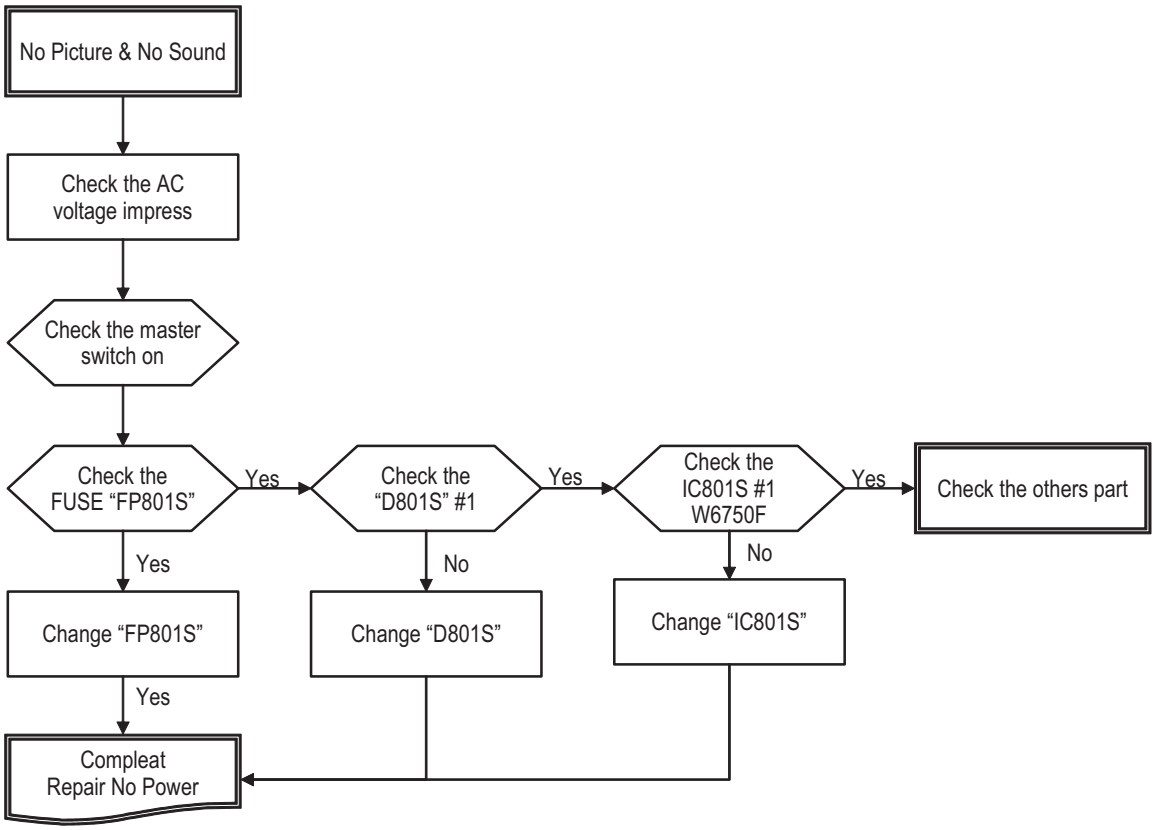
6-1 Checkpoints by Error Mode

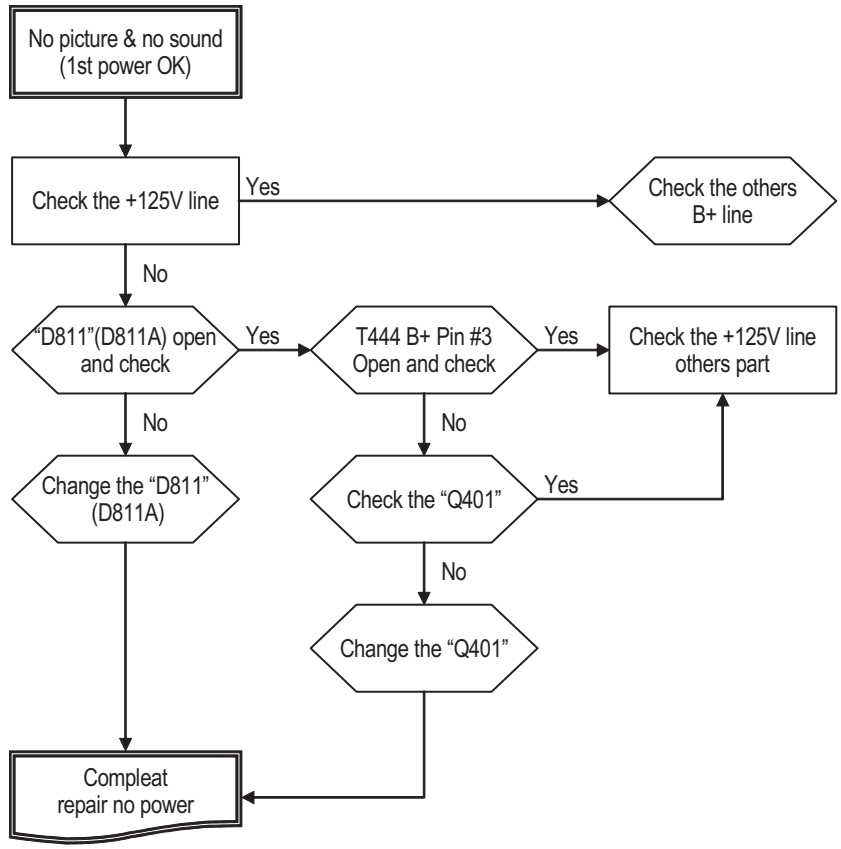
■ Power LED: Check that the LED works when turning the Master Switch ON/OFF

■ LED Indicators: See table 6-3-1 Basic Troubleshooting: LED Diagnosis on the Front Panel.

■ In case of a power failure or abnormal screen, check the following items.
1) Check that the power cord is correctly connected to a 230V wall outlet.
2)Check that the Master Switch has been pressed.
3) Check that the transmitter is turned on.
4) Check that transmitter device selection is set to TV.
5) Check that the signal cable is properly connected.
6) Check that channel setting has been set.

6-1-1 Flow Chart for Malfunction





6-2 Trouble-shooting with New Features

6-2-1 Installation & Connection

Problem	Solution
The power does not turn on.	Check if the power cord is properly connected.
Air broadcasting does not work.	Check if the antenna is properly installed.
Cable broadcasting does not work.	Subscribe to a local cable broadcasting firm and get support.
Satellite broadcasting does not work.	Install a satellite antenna (Parabola) and connect it to the TV.

6-2-2 Menu & Remote Control

Problem	Solution
The remote control does not work.	■ Press the Select Device button to select the TV or external device. ■ Replace the battery of the remote control with a new one. ■ Insert the battery making sure the polarity (+,-) is correct. ■ Check if the angle or the distance is sufficient, or if there is any interference between the product and the remote control. ■ Make sure the user has pressed the correct button. ■ To avoid direct sunlight to the receiving panel of the TV, remove any indoor lighting or change the location of the TV. ■ Check if the power switch at the back left of the TV is turned on.
Cannot change the channel with the remote control.	■ Press the Select Device button to select the TV. ■ Change the channel using the remote control of the cable or satellite receiver.
Cannot select an A/V channel.	Press the TV/AV button and check if the AV item is grayed out. When the AV item is grayed out, you cannot select an A/V channel. Check if the connector is properly connected.
Cannot select a menu.	Check if the menu is grayed out. If a menu is grayed out, it cannot be selected.

6-2-3 Screen

Problem	Solution
The screen is black and there is no sound.	■ Check if the power cord is properly connected. ■ Turn on the power. ■ Select an AV channel that corresponds to the external device.
Only the screen is blank/it is dark or too bright.	Adjust the screen brightness.
The screen is blue/the external channel is not displayed.	■ Check if the connector is properly installed. ■ Select an AV channel that corresponds to the external device.
The screen overlaps (double/triple).	■ Check if the antenna is properly installed. ■ Adjust the position, angle or direction of the antenna.
The screen is snowy or unclear. The picture quality gets worse when it is windy	■ Check if the antenna has been bent or moved by the wind. ■ Check the antenna for its lifetime. (Normally 3 - 5 years, 1-2 years near the coast)
Dotted or semi-dotted lines are displayed on the screen.	Install the antenna as far away from the road as possible.
The screen is black and white.	■ Adjust the color density. ■ Check if the connector is properly installed.
The colors of the screen are odd/strange.	Adjust the color tones.
Unusual lines appear on the screen.	Keep the antenna away from the power cord or connectors if possible.
Unusual lines appear on the screen when watching or recording to video.	Keep the video player as far away from the TV as possible.

6-2-4 Sound

Problem	Solution
There is no sound.	■ Increase the volume. ■ Press the Mute button.
The sound is very low.	■ Increase the volume. ■ Set the auto volume control to ON.
There is a lot of noise.	Keep the antenna away from the power cord or connectors if possible.
The selected language does not appear.	Press the Multiplex button to select the TV.

6-2-5 Channel

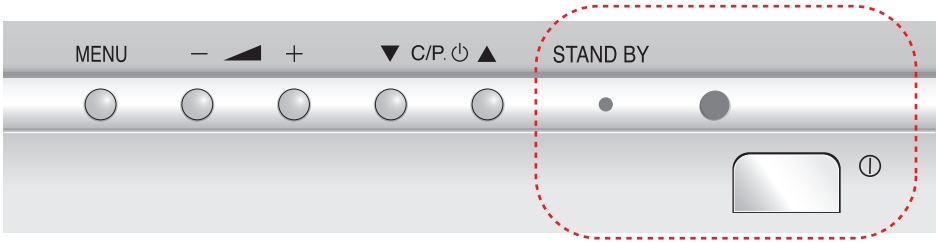
Problem	Solution
There are no channels available.	■ Check if the antenna is properly installed. ■ Press the Auto Channel button to store channels. ■ Contact your local broadcasting service station.
Some channels are not available.	■ Adjust the position, angle or direction of the antenna. ■ Activate the Reception Sensitivity Boost feature. ■ Contact your local broadcasting service station. ■ Use the number keys to select a specific channel and press Store/Clear to memorize it.
Only the UHF (14-69) channels are not available.	Check if the antenna is able to receive UHF signals.

6-2-6 Others

Problem	Solution
The TV makes a noise as if something is dropping inside.	This noise may occur when the plastic material inside the TV expands or contracts according to the seasonal temperature or humidity. This is like the noise from a furniture/cabinet/sink unit, and there is no need for concern.

6-3 Troubleshooting Procedures by Error Modes

6-3-1 Basic Troubleshooting: Diagnosis of LED on the Front Panel



● : Light is On
◑ : Light is Blinking
○ : Light is Off

Power	Description
○	This happens when the Master Switch is not pressed or the power cord is disconnected.
●	This happens when the power cord is connected and the power switch is pressed. If you cannot set the power switch on by pressing it, check the power switch Ass'y.
○→◑→●	If you press the power switch of the transmitter or the channel key on the remote control when in St-BY status, the screen will be turned on. If the LED blinks and the screen is not displayed, check the connection between the Control Assy and the Main Board.

6-3-2 Troubleshooting by the Checksum

■ Diagnosis of trouble by the checksum is neither reliable nor convenient.
You can only use the checksume of the current direct-view TV to determine whether the software is corrupted or not.
The Checksum value is determined according to the version of the software loaded on the set.
Therefore, you can determine whether the software has been properly downloaded, if you know the correct checksum for that version of the software.

You can check the checksum according in the following order.
Factory Mode → Checksum → Right Button → Calculate Checksum → Output Checksum (e.g. 3036)

■ Checksum Examples
T-TR2PEU-1000 : checksum = 8036
T-TR2PEU-1010 : checksum = B612